THE DOUBLE-FILIGREE OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA,

With Notes of Thirty-three Cases; and on Certain Cases of Ventral Hernia Cured by the Implantation of Filigree.

BY

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The results of operative surgery in the treatment of large inguinal herniae leave much to be desired. Even at the present time, when so much has been accomplished in other departments of surgery, it is the general complaint of surgeons that in inguinal herniae in patients of poor physique, in elderly subjects, in those whose occupation involves a constantly-recurring increase of intra-abdominal pressure, and indeed in any patient in whom such hernia has recurred or has exceeded the more moderate dimensions, the prospect of accomplishing a really radical cure is extremely remote and in some cases quite hopeless.

So much has already been written on the causes which originate a hernia and on those which contribute to its recurrence after operation, that it would be a mere waste of time to reproduce them here. There are, however, certain points with regard to the principles underlying the operative treatment of inguinal hernia which can only be brought home by repetition; and these I would venture to state here, as I have already done elsewhere.

I.

The complete and permanent cure of inguinal hernia depends on: (*a*) The total abolition of the peritoneal sac or *sacs;* and here it must be remembered that one of these may be thick-walled and perfectly obvious, while another may be present which is of the most extreme tenuity, difficult to find, with a lumen only admitting a probe, and yet quite capable of enlarging one day to greater capacity. (*b*) The *permanent* approximation of the muscular structures of the inguinal canal to Poupart's ligament. (*c*) The maintenance of the histological character of these structures by careful operative technique and by the subsequent employment of properly regulated physical exercises. And (*d*) on the prolongation of convalescence in the recumbent position for a period much beyond that which is usually accorded to these cases.

It is easy to see that while the first and fourth of these essentials present no very great difficulty, the second and third are not so simply attained. The gap to be covered may be enormous; the musculature may be attenuated, friable, and fibrous, and thus it may be that the whole inguinal canal presents such a wreck that the possibility of cure seems quite out of the question. In other cases, although the structures may be in fair condition, the amount of dissection required to accomplish the approximation, especially in old-standing and recurrent cases, and possibly the tension necessary to keep muscle and ligament in accurate contact, are such that, within a few weeks of the operation, what was muscular is reduced to fibrous tissue.

Now the muscle which is brought down is brought down with a very definite object; its purpose is not merely to block the canal *passively* by its presence (the peritoneum and the abdominal aponeurosis would of themselves do that), but by its *active* contraction to tighten up the walls of the canal without suffering permanent loss of elasticity in doing so. When an operation has been done and the trouble recurs, it is not muscle which is found covering the sac; what is found is merely the fibrous remains of the stretched union, the muscle having receded to a point above the level of the canal. Had the muscle been sound and active, and had it remained in close apposition to Poupart's ligament, recurrence would have been impossible. It is therefore clear that to get a permanent result which shall honestly deserve the term "radical cure," a term hitherto much misused, is not by any means so simple as it would at first sight appear.

II.

It must be borne in mind that in no branch of surgery is the old proverb concerning "the stitch in time" more truly applicable. Bassini's operation, when done early in the history of a hernia and followed by sufficiently protracted convalescence, is an excellent operation in most cases; there are others, however, in which it fails to meet the requirements of modern surgery, and these may said to be the following:

1. Those of inguinal hernia in elderly subjects.
2. Those in adult life where the strain of certain occupations is so constant and severe upon the abdominal walls, that it is unreasonable to expect a cure when treated by the ordinary methods.
3. Those in which, although in young subjects, the muscular structures of the part are found at time of operation to be thin, badly developed, or stretched and loose over a large area.
4. Those in which the hernia has recurred, especially if after a carefully carried out operation followed by a primary union.
5. Those in which the hernia is of such size that the gap cannot be closed without the exercise of such tension as to produce strangulation of the structures within the grip of the sutures—a condition which is one of the most certain of all the predisposing causes of recurrence.

III.

It is even at the present time no uncommon thing for the surgeon to be expected to bring about a cure in a case where, for years, the hernia has been subjected to the pressure of a truss. In such a case it is quite unreasonable to hope for any permanent result, especially if the truss has been a very heavy one, possibly badly fitted, or more probably never fitted at all in the proper sense of the term. The tissues underlying such a truss, and indeed under every truss, will be found to be matted, thinned out, and the muscles almost entirely converted into fibrous tissue. It is impossible to look upon the truss as anything but an antiquated piece of apparatus, the very existence of which is a sorry testimonial to progressive surgery, the use of which generally results in gradual injury to the wearer, and the results of which tax the surgeon's best efforts to undo when the time comes that the truss is no longer able to hold up the protrusion.

IV.

There is a point which is entirely ignored in most textbooks on the subject of inguinal hernia, and which is yet of the greatest importance in dealing with the trouble in herniae of long standing and in elderly subjects. This is the weakness of the abdominal wall so frequently seen to the *outer* side of the internal abdominal ring. There is little doubt that this weakness, which is evidenced by softness and bulging of the tissues here, is responsible for much of the recurrence seen after Bassini's operation in these cases. No matter how carefully the suturing of the canal may have been carried out, the failure to strengthen this region will greatly prejudice the result in the course of time, and if a cure is to be achieved, some method must be adopted by which the muscles can be reinforced and the tendency to bulge can be counteracted.

V.

Lastly, referring to a point already mentioned, it cannot be denied that, in this country at least, the constantly increasing demand for admission to hospital, a sense of monotony on the part of the surgeon who has to deal with an unending stream of hernial operations differing very slightly in interest, and the constant thirst of the student for a fresh draught of clinical material, has brought about the undesirable practice of unduly shortening the period of convalescence of the patient, with the result that in most hospitals this period is represented by a bare three weeks. Now, when we consider carefully the condition of a cicatrix resulting from a union by first intention at the end of three weeks, it must be perfectly obvious to most of us that it is simply courting failure to allow the patient to get about so soon after operation. The new exudate from the lips of the wound is barely organized; such fibrous tissue as is formed from it is immature and extremely distensible, the sutures are not yet absorbed,

and in some patients there is comparatively little difficulty even in opening up the deeper tissues of the cicatrix with the handle of a scalpel at this date. It seems to me to be an absolute waste of time, skill, and material to perform an operation which is expected to result in a radical cure, and then to ruin the whole of the work by sending the patient out at a time when his wound is barely consolidated. Surely it seems worth while, for the sake of our professional reputation as well as for the benefit of the patient, that convalescence should be sufficiently prolonged to render the result of the operation permanent, even if the cost to the hospital is thereby slightly increased.

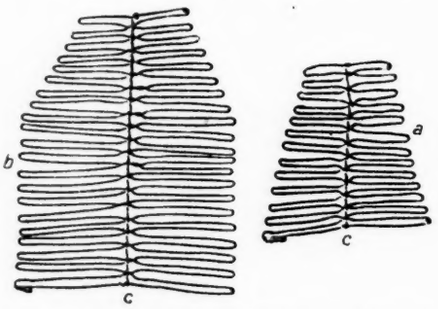

Fig. 1.—*a*, Iliac section; *b*, pubic section; *c*, midrib of filigree.

It was with the idea of bringing *all* cases of inguinal hernia within the scope of operative treatment, of doing away entirely with the use of the truss, and of establishing a method of treatment which should honestly deserve the name "radical cure," that I devised in 1905 the method which I have termed the "double-filigree method," and which I described in the following year at a meeting of the Clinical Society. This method I now propose to describe more fully, since I have found it to bear out in the fullest manner all that I then claimed for it. The method consists in strengthening the walls of the inguinal canal by the implantation of two filigrees of silver wire in the tissues in such a way that subsequent stretching or bulging is rendered impossible, and the necessity of a truss is entirely done away with. The results obtained by the implantation of filigrees of silver wire in the cure of ventral herniae of large dimensions—an operation first devised by Bartlett in America—have proved that not only is the area involved rendered permanently unstretchable, but that there is no tendency on the part of the tissues to cast out the structure as an irritative foreign body, even when enormous filigrees are employed. Thus, I myself (as has also my colleague, Mr. Douglas Drew) have on many occasions buried abdominal filigrees measuring as much as 9 in. to 10 in. in length, and 4 in. to 5 in. in breadth. This being so, the idea occurred to me that some such method might be applied to the cure of inguinal hernia, especially in those cases which I have tabulated under my second heading. Before detailing, however, the method of manufacturing and applying these filigrees, I would state briefly the principles underlying their use.

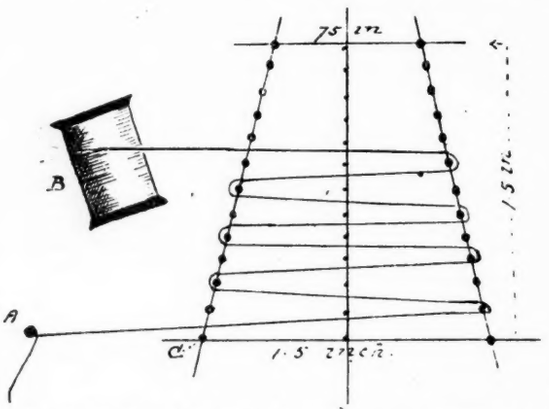

Fig. 2.—Method of making the sections. A, Anchor pin; B, bobbin, thirteen pins on either side; C, point at which loose ends are twisted on completion of zig-zags. The black dots represent pins.

In all cases in which hernia occurs or recurs, the chief factors are:

(*a*) The presence or formation of a peritoneal sac.

(*b*) The recession or pushing aside of the muscular walls of the inguinal canal,

(*c*) The stretching of the fibrous structures covering the canal.

Remove the sac, fix the muscles *permanently* in position, prevent the fibrous structures from stretching, and the cure will be a "radical" one. Of the last two of these requirements the second is by far the most important; the sac must of course be removed, but it is upon the third especially that the ultimate cure depends. Now, when a filigree of silver wire, such as I shall presently describe, is placed in the tissues composing the inguinal canal, presuming that it is perfectly aseptic, the first effect is that of local irritation of the parts in contact with it; this results in the exudation of lymph, which rapidly organizes about the filigree, and in a very short time new vessels and young fibrous tissue are produced and grow around, among, and between the wires of the filigree to such an extent that ere long a solid plaque is formed which once and for all converts the inguinal canal into a sound, resistant area, which will neither stretch nor bulge, the muscles, peritoneum, and aponeurosis being welded together by the filigree, which acts much as the backbone of a sole does upon the tissues which it supports; but there is this difference, that the ends of the filigree wires, being in the form of a loop, they are capable of acting as retaining sutures, whereas the bones of the sole only act as a scaffolding for support. The following is the method of making the filigrees I am in the habit of using, and which until recently I made myself.

They are made in two sections—namely, a pubic (*a*) and an iliac (*b*), Fig. 1; the former is always made of the following dimensions: At the narrow end its width is ¾ in.; at the wide end, 1½ in.; its length is also 1½ in., this being the usual length of the adult inguinal canal. Being constructed on the principle that every filigree, whether abdominal or inguinal, should be made with not fewer than eight loops to every inch of its midrib, this will give thirteen loops on either side of the pubic section of an inguinal filigree. The iliac section (*b*, Fig. 1) is made in such a way that its inner third corresponds in shape and size to the outer two thirds of the pubic section. Its outer end must meet the requirements of the case, being trapezoid, square, or, what is more usual, oblong, and of a total length of 2½ in. to 3 in., as may be found necessary. The wire must be of unalloyed silver, and for convenience sake it is well to keep to the same gauge for all filigrees—namely, No. 28 Standard wire gauge.

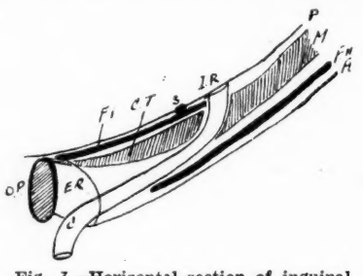

Fig. 3.—Horizontal section of inguinal canal.

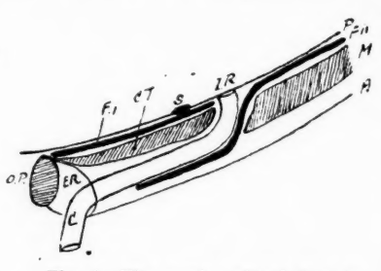

Fig. 4.—Iliac section placed deep to internal oblique muscle external to internal abdominal ring.

A, Aponeurosis; C.T., conjoined tendon; C, spermatic cord; O.P., symphysis pubis; F.i., pubic section of filigree; F.ii., iliac section of filigree; E.R. and I.R., external and internal rings; S, neck of sac tied off; P, parietal peritoneum; M, muscle.

A board of soft wood or cork is taken, and on it is placed and fixed by pins a sheet of white paper; upon this the plan of the filigrees to be made is drawn out accurately. Stout pins are then inserted vertically, as in the diagram,

and an odd one, the "anchor" pin (*a*, Fig. 2), is placed to the left of the wider end of the plan from which to start, the wire being given a turn or so round it. The wire now runs from the end pin on one side to the second from the end on the other, and so on from side to side, a pin being missed each time, and the wire being carried round the outer side of the pins. Having reached the last pin on one side, it is carried across to that of the other, and so begins to travel back to the pin from which it started, when the anchor pin (*a*) is removed, and the ends of the wire are neatly twisted together round the outer side of the first pin of the row and cut off short. It will now be seen that the crossing of the wires falls evenly down the centre of the filigree, and the mid-rib (*c*, Fig. 1) is attached. This is done by taking a separate short strand of wire and fixing it to the centre of the strand at the wide end; from this point it is carried along the centre of the filigree, a turn being made round each point of crossing of the wires, at which points it is firmly pinched by a pair of dissecting forceps to fix it in position. On reaching the opposite end of the filigree the mid-rib is finished off by being attached to the last strand in the same manner as that by which it was fixed to the first. The surplus being cut off short and the pins removed, the filigree is complete. A little practice is required to produce the most perfect work, as the pull of the wire must be kept equal at all points and breakages avoided, since joins are not only clumsy but difficult to effect. The method of employing these filigrees is as follows:

As perfect asepsis is imperatively necessary here, indeed even more so than in the case of abdominal filigrees, it may be said that the filigrees should be placed in ether for five minutes to remove all grease from them, and should be left in the sterilizer *in the centre of the most actively boiling area*—it is necessary to emphasize this point, as I have seen them placed at one end where there was barely a trace of ebullition—and left there till the moment of implantation, when they are lifted straight from the sterilizer into the wound.

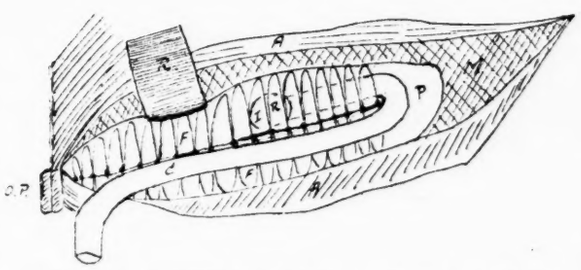

Fig. 5.—A, Aponeurosis; C, cord; F, filigree; M, internal oblique muscle; R, retractor; O.P., os pubis; P, peritoneum; I.R., internal ring.

The operation is at first conducted exactly as in performing an ordinary Bassini's closure, except that the aponeurosis should be split to a point rather farther out, and the peritoneum must be more freely separated from the posterior surface of the conjoined tendon, as must the latter be from the aponeurosis overlying it. From this point the steps are as follows: The sac having been isolated and dealt with, the cord is held out of the way, and the first two of the sutures which are to approximate the conjoined tendon to Poupart's ligament are inserted, and their ends are caught by pressure forceps. These sutures being held aside by the assistant, the pubic section of the filigree is placed upon the peritoneum, its narrow end being close to the pubic spine, and its wide end at the inner margin of the internal abdominal ring. If the peritoneum is very loose and inclined to sag, a fine suture may be used to unite it to the filigree; as a rule, however, this is unnecessary, and all that is required is to bring the conjoined tendon into close apposition with Poupart's ligament *over the filigree* by the two sutures already inserted, and then to insert as many more as may be deemed necessary, care being taken to keep the bed in which it lies as dry as possible. In cases in which the muscular wall of the abdomen external to the internal ring is sound and strong, the cord is placed in position, and the iliac section of the filigree is taken from the sterilizer and is placed beneath the aponeurosis in such a way that its inner end lies over the internal abdominal ring and upon the cord for a space of ¾ in., the outer end being carried outwards and laid upon the surface of the internal oblique muscle, one or two sutures holding it in place (Fig. 3). If the above-mentioned weakness is present, the muscular wall is divided from the ring outwards towards the iliac spine for about an inch, and is separated from the peritoneum by the handle of a scalpel; upon this peritoneum the outer end of the iliac section is laid, being lightly sutured in place, and the muscles are brought together again over it (Fig. 4), the inner end lies as already described. Finally, the aponeurosis is sutured in place and the wound closed by means of Michel's clips, which are removed on the fifth day.

It will be seen from this that the cord comes to be "sandwiched," as it were, between two layers of filigree in the canal, the natural relations of which are hardly altered; and further that the area external to the internal abdominal ring is fortified by a filigree which may be made of any size which may be deemed necessary.

It is obvious that such a proceeding as I have described must in most cases be comparatively simple in its performance; it will be found equally satisfactory in its results. Granted a primary union of the wound, the hernial gap will be found to become as impermeable and as unstretchable as a pad of leather. There will be neither pain nor discomfort afterwards; there is not the least fear of interference with the cord nor with the functions of the testis; the necessity for any form of truss is done away with permanently, and the operation thus offers the patient a radical cure in the truest sense of the word.

Now what are the disadvantages of the method, if there are any, to be placed against these points in its favour?

I think I may honestly say that the only disadvantage is that, if suppuration should occur, the iliac section and possibly (although not so probably) the pubic section, may shift their positions; or if only a slight sinus should develop, that convalescence may be unduly prolonged. It must be understood that the inguinal region is by no means so favourable a site for an aseptic operation as is the abdominal wall when one is dealing with a ventral hernia. If suppuration occurs and the filigrees shift, the probability is that the cure will fail, just as it does in cases where no filigree is used. In this respect the operation differs entirely from that for ventral hernia, where even if sepsis occurs, not only is there no possibility of the filigree shifting its position, but the eventual result is only to fix it more firmly and to consolidate the tissues more thoroughly. In such a case of failure, it is perhaps better to remove the filigree, wait until healing has taken place, and again perform the operation. To some extent this plan was adopted in one of my cases (Nos. 7 and 18) and a cure was then effected.

In cases in which the suppuration is purely superficial and slight, and in which it is felt that the iliac section has not shifted, it should on no account be removed, as in most cases it will not affect the result and careful dressing will usually induce the sinus to close.

It may be asked why these cases are more likely to break down than other cases of hernia. The answer is that they are the largest and worst cases; many of them are recurrent herniae, and therefore the amount of tearing and dissection necessary to separate the layers and make a bed for the filigree commonly results in the oozing of blood serum and fat, which, taken in conjunction with the proximity to the genitals and anus, renders the wound a particularly favourable nidus for bacterial action.

Since I first devised this operation I have had occasion to perform it in the following 27 cases, and to these cases I have added 3 cases operated upon by my colleague, Mr. C. C. Choyce, who has kindly allowed me to publish them, as well as 3 cases in which a single long filigree was used, the first cases in which I attempted to treat inguinal hernia by filigree; two of these were in women, and one in a man. Since these latter were done, however, although they have been perfectly satisfactory, I have used only the double filigree method, as it has enabled me to deal with cases which the single filigree would hardly have controlled, and this is especially the case in men, in whom the anatomical conditions necessitate a difference in method.

CASE I.

A woman, aged 40. Gap in the left inguinal canal admitting three fingers straight into the abdomen; ten years' history;

sac the size of an orange; pain and dragging sensation preventing her work. Sac excised and filigree measuring 3 in. by 1½ in. placed deep to conjoined tendon. This patient is engaged in heavy manual work, and although she has never worn any support since operation, the inguinal region is sound and firm. Done four years ago.

CASE II.

Seaman, aged 61. Very large inguino-scrotal hernia, partially reducible, and of many years' standing, for which he has worn a truss; this has, however, failed to control the mass for the last nine months. Sac very thick, and tissues much thinned out and adherent about the neck; adherent omentum in sac. Filigree measuring 3 in. by 1½ in. placed deep to conjoined tendon. In order to allow filigree to defend space outside internal abdominal ring, cord had to be drawn outwards round the end of filigree, and was then carried down in front of muscle after its approximation to ligament (Fig. 5). It was this case which, owing to this difficulty with the cord, suggested to me the necessity for the use of two filigrees, in order that the natural position of the cord might be maintained, and at the same time the space outside the ring efficiently strengthened. Unfortunately a stitch sinus resulted, and the filigree could be felt for some weeks through it. I then advised removal of the latter. Patient refused, saying he preferred the "little hole" to the chance of his hernia returning, and went out. Six weeks later sinus had healed. Two years later he wrote saying that he was "well and sound in spite of constant hard work as a pilot, and was grateful for not having to wear a truss." Done nearly four years ago.

Fig. 6.—Case VIII.

CASE III.

A woman, aged 63. Large left inguinal hernia presenting for ten years. Operation similar to Case I. At present time well and sound, doing hard housework and wearing no kind of support. Hernia admitted half the hand into abdomen, and muscles were very thin. Done three years ago.

CASE IV.

Seaman, aged 17½. Double inguino-scrotal hernia, right side recurrent from operation done abroad. Abdominal muscles weak and bulging towards iliac spine on either side; wide neck to both sacs. This was the first case in which the double-filigree method was done. Convalescence normal. Done three years ago. Last April had an inguinal bubo which caused iliac section to present; this has left a sinus. Up to time of infection was sound.

CASE V.

Seaman, aged 58. Large right direct inguino-scrotal hernia, gap admitting four fingers; has worn a truss for many years. Now gets griping pains, and has to give up work at times. Omentum adherent in a thick sac, the neck of which was almost cartilaginous; much matting round neck. Double filigree implanted three years ago. (No reply as yet.)

CASE VI.

Seaman, aged 51. Almost exactly similar case to the preceding. Implantation three years ago. Writes to say he is "well, up to date."

CASE VII.

Seaman, aged 40. Recurrent left inguinal hernia, admitting three fingers into abdomen; patient alcoholic and slightly cirrhotic; tissues found matted and friable, their separation resulting in much oozing into the scrotum. Double filigree implanted. Sinus formed on tenth day and discharged freely; subsequently became very much smaller and finally healed, and patient went out. At this time there was some bulging, and it was clear that the filigree had shifted its position. Warned patient to return if hernia recurred. (See Case XVIII.)

CASE VIII.

A negro seaman, aged 43, with a very large traumatic inguino-scrotal hernia (Fig. 6), measuring 12 in. long and 18½ in. in circumference. Sac contained much omentum, bowel, and mesentery, the neck of the sac measuring 3 by 2 in. The hernia was complicated by an old and very thick-walled hydrocele of such a character that I considered it wise to remove the testis. Double filigree implanted 2½ years ago. Wife has written to say patient gone to sea well and sound.

CASE IX.

Seaman, aged 72. Large right inguino-scrotal hernia for sixteen years. Truss had thinned out and almost destroyed the muscular walls, so that bowel seen through skin. Small sinus followed operation, but he went out with inguinal region firm and strong. Implantation 2½ years ago. Writes to say there has been no return of rupture, and is well and sound.

CASE X.

Seaman, of 36, with large double inguinal herniae of six years' standing. Gaps admitted three fingers on either side, and there was much bulging outside the internal abdominal rings. Implantation done two years and three months ago. Writes to say, "Operation is quite a success, in spite of heavy stoking and blacksmith's work for many months."

CASE XI.

Seaman, aged 62, very stout and plethoric, with an enormous left inguino-scrotal hernia of nine years' standing (Fig. 7). This was, I think, the largest inguino-scrotal hernia I have ever seen, and measured 15 in. in length and 25 in. in circumference; the penis had retracted entirely out of sight. This was the first case in which I employed spinal analgesia. The sac was so adherent that it could not be removed, and contained the whole of the sigmoid colon with its mesocolon, and a very large mass of omentum, all of which were adherent to the sac and to each other. When reduced it was found that the whole fist could be easily passed into the abdomen through the neck of the sac. The sac was isolated at its neck and divided between ligatures; a double filigree was implanted, and convalescence was uninterrupted. Done nearly two years ago. Fig. 8 shows this patient after operation; a Keetley's suspender is applied to assist the shrinking of the scrotum. As yet no answer.

CASE XII.

Seaman, aged 59. Left inguino-scrotal hernia. Double filigree implanted eighteen months ago. Convalescence normal. Spinal analgesia. Writes to say, "Well, up to date."

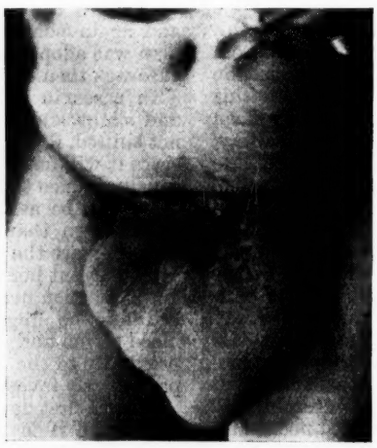

Fig. 7.—Case XI.

CASE XIII.

Seaman, aged 25. Inguinal hernia on right side, inguino-scrotal on left; Bassini on right, double filigree on left. Normal convalescence. Implantation eighteen months ago. Spinal analgesia. So far no answer.

CASE XIV.

Seaman, aged 32. Right inguino-scrotal hernia; double-filigree inserted eighteen months ago. Convalescence normal. Spinal analgesia. No address for inquiry.

CASE XV.

Seaman, aged 44. Large inguinal hernia on right side which had twice recurred after operation. Prolonged dissection required to separate the structures about the neck of the sac. Gap admitted half the hand. Double-filigree implanted sixteen months ago. Convalescence normal. Spinal analgesia. Writes to say no pain or discomfort, and is stronger than ever.

CASE XVI.

Seaman, aged 50. Large inguino-scrotal hernia on the right side; thinned tissues owing to truss pressure. Double-filigree implanted sixteen months ago. Convalescence normal. Spinal analgesia. No answer received yet.

CASE XVII.

Colour-Sergeant, late R.A.M.C., aged 42. Very large inguino

scrotal hernia of seven years' duration; gap measuring 3 in. by 1½ in. Implantation done sixteen months ago. Convalescence normal. At work ever since and doing heavy gardening work without difficulty. Spinal analgesia.

CASE XVIII.

Same case as No. 7. Returned with his hernia recurrent, as I anticipated, the filigree having shifted as the result of the suppuration above mentioned. Pubic section firmly in place, iliac section found lying 1 in. above its proper level and too firmly imbedded for removal; hernia appearing external to internal abdominal ring and just below iliac section. Sac removed and a fresh iliac section implanted. Convalescence normal. Done fifteen months ago under spinal analgesia. Writes, "Operation quite successful, and I feel better than I have been for years."

CASE XIX.

Seaman, aged 50. Right inguino-scrotal hernia for seven years; has worn a truss up to date. Double-filigree implanted thirteen months ago. Convalescence normal. Spinal analgesia. No address available for inquiry.

CASE XX.

Seaman, aged 29. Large recurrent inguinal hernia on the right side. Recurrence was the result apparently of sepsis, as the scar is stretched and pigmented. Patient says the operation was done three years ago, and the recurrence was noticed at the end of six months. Double-filigree implanted a year ago. Convalescence normal. Spinal analgesia. No answer received to date.

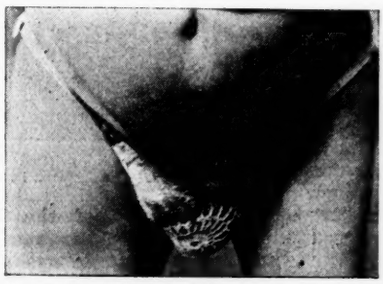

Fig. 8.—Case XI.

No inquiry has been made in the following cases as all are less than a year old.

CASE XXI

Seaman, aged 38. Double inguino-scrotal hernia for five years; has never worn a truss. Although both herniae were large, the tissues were not markedly matted, and the muscles were in fair condition, which would not have been the case if a truss had been worn. Double-filigree implanted on both sides; convalescence normal. Done nine months ago under spinal analgesia.

CASE XXII.

Seaman, aged 49. This case was of interest not only from its size, but because it was entirely extraperitoneal of the bladder, this organ being enormously enlarged, so that the portion of it composing the hernia could easily have contained over a pint of fluid. The peritoneum was sutured into the angle of the pubes, and a double-filigree implanted under spinal analgesia. Convalescence was normal. Done nine months ago.

Fig. 9.

CASE XXIII.

Seaman, aged 51. Recurrent inguinal hernia on right side. Double-filigree implanted seven months ago under spinal analgesia. Convalescence normal

CASE XXIV.

Seaman, aged 52. Large inguinal hernia of right side of six years' standing; no truss had been worn. Double-filigree inserted. Normal case, done under spinal analgesia four months ago.

CASE XXV.

Seaman, aged 41. Double inguinal hernia (inguino-scrotal on the right side, and wide gap on the left). Double-filigrees on both sides; convalescence normal. Done four months ago under spinal analgesia.

CASE XXVI.

Seaman, aged 34. Large recurrent inguinal hernia on the right side. Sac very adherent and tissues much matted about the neck. Double-filigree implanted under spinal analgesia three months ago; subsequent extensive oozing of blood into scrotum, groins, and perineum. Scrotum opened and clots removed. Wounds remained aseptic; scrotum shrank to normal size in three weeks. Inguinal region firm and strong on discharge. Done four months ago.

CASE XXVII.

Seaman, aged 27. Large reducible inguino-scrotal hernia on left side; gap admitting four fingers; cord frayed and stretched out over sac; muscles thinned and adherent at neck; double filigree implanted; convalescence normal; done under spinal analgesia two months ago.

CASE XXVIII.

Seaman, aged 45. Stout heavy man, with a large inguino-scrotal hernia on right side, which he has had for five years. Contents reducible, but tissues extensively matted at neck, and cord spread out over sac; gap admitted half the hand. Much bulging towards the iliac spine. Owing to the width of this man's pelvis and the extent of the bulging I was compelled to use a third filigree to cover the area, not having an iliac section of sufficient size at hand. Convalescence normal. Done under spinal analgesia recently.

CASE XXIX.

Seaman, aged 54. Prematurely aged and feeble man; muscular wall of abdomen flabby and weak; was operated upon some years ago for hernia of the right side by Mr. Johnson Smith (no sign of recurrence); left inguinal hernia present for three years. Gap admits three fingers directly into the abdomen. At operation sac very thin indeed; muscles almost converted into fibrous tissue; rectus muscle brought out of its sheath in order to cover the pubic section; iliac section deep to abdominal muscles. Done under spinal analgesia; patient still in hospital.

CASE XXX.

Seaman, aged 59. Large direct inguinal hernia on right side for last twenty years and slight bulging on left. Muscular walls of abdomen bad; much matting about neck of sac, and bad bulging outside internal abdominal ring. Double filigree implanted under spinal analgesia on right side and Bassini's operation on left. Done recently; patient still in hospital.

The following are Mr. Choyce's cases:

CASE XXXI.

A seaman, aged 37. Left inguinal hernia operated upon nine months previously, had since recurred, although he had rested six months before returning to work. He also had a right inguinal hernia. On left side neck of sac very wide, necessitating suture in place of ligature. Single filigree implanted on peritoneum and muscles sutured over it. Healed by first intention. Done two years ago. No address available for inquiry.

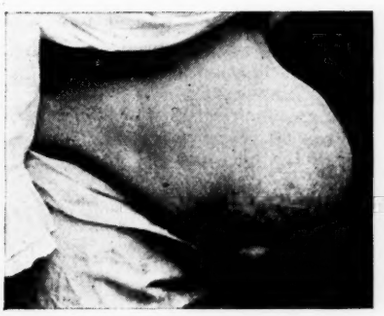

Fig. 10.

CASE XXXII.

This patient, a seaman, had a very large inguinal hernia, which had been unsuccessfully operated upon four times in the previous twenty years; on each occasion the hernia had recurred within a month. He had worn a truss, which, however, no longer controlled the rupture. Last operation was done five years previously. Skin showed old cicatrices of operations and counter-incisions, pointing to old suppuration, which had occurred after two of his operations. Sac found very thick and adherent to contents. Muscles almost unrecognizable, owing to fibrosis. Double-filigree implanted in planes representing those in which the filigree is usually placed, but which, in this case, it was quite impossible to differentiate. Patient healed by first intention, and was discharged well. Mr. Choyce remarks: "In July, 1908, this patient attended my out-patient room for another condition; his hernia had not recurred, nor was he wearing a truss. He had no untoward symptoms, and there was no pain nor discomfort from the filigree." At this time the operation had been done nearly two years. This patient is sound and well at the present time.

CASE XXXIII.

A seaman, aged 42. Left inguinal and interstitial hernia of five months' duration, following a fall. There was a large gaping ring. A single filigree was implanted superficial to the cord. Primary union. Patient has not been seen since. Done fifteen months ago. No address available for inquiry.

Fig. 11.

In conclusion, I would draw attention to the fact that I have carefully excluded from my series of cases any in which there was even a remote prospect of cure by Bassini's method; consequently there is no case here reported which was not considered by others as well as by myself to be quite outside the scope of any operative method hitherto published.

The results tend, I think, to show that the method is capable of dealing with herniae of the largest dimensions, and in patients whose age has hitherto been considered as a contraindication to operation, owing to the tendency to recurrence.

Fig. 13.

NOTE ON VENTRAL HERNIA.

As regards the subject of ventral hernia, the chief object of this note is to publish the accompanying photographs, which are those of two cases under my care some time ago, and the particulars of which I have not hitherto published; and to depict the filigree which I now use, and which is a modification of that originally described by Bartlett.

The first of these photographs (Fig. 9) is that of a woman of 49 years of age, who was admitted to the Seamen's Hospital in August, 1907, for an enormous umbilical hernia of many years' standing. As will be seen, the lower part of the sac was occupied by a large adherent mass of bowel and omentum. The amount of sacculation present necessitated the removal of so much of the abdominal wall that the return of the contents to the abdominal cavity, and the closure of the abdomen, was only accomplished with the greatest difficulty at the end of an hour. A filigree measuring 9½ in. by 4½ in. was implanted and covered as far as possible by the frayed-out remains of the rectus muscles. Owing to the great intra-abdominal tension, even after nearly the whole omentum had been removed, the patient remained very collapsed through the night. She recovered well however, the wound, which measured 14 in., closing by first intention, and she returned to her work, that of a cook, at the end of six weeks. The second photograph (Fig. 10) shows the hernia from the side, and Figs. 11 and 12 the result of the operation, also from the front and side. I have recently heard from this patient that she is in good health, doing her work without any form of support, and that the filigree causes her no discomfort whatever.

Figs. 13 and 14 are photographs of another woman, aged 43, who was admitted for a post-operative hernia of very large dimensions, nearly a year ago. The skin was in very bad condition, and so adherent that almost the entire covering of the sac had to be sacrificed. There was a large amount of adherent bowel and omentum, and the right rectus muscle was atrophic and pushed to the right of the hernia. A filigree of the same size as the last was inserted between the muscle and peritoneum below, and between the muscle and posterior sheath above. On the twenty-first day a small stitch sinus developed and gave some trouble, remaining open down to the filigree for some weeks. Eventually this closed, and the patient went home well in every respect. She is now, and has been since her discharge, doing hard manual labour at home, without the support of any form of belt, and feels no discomfort from the presence of the filigree.

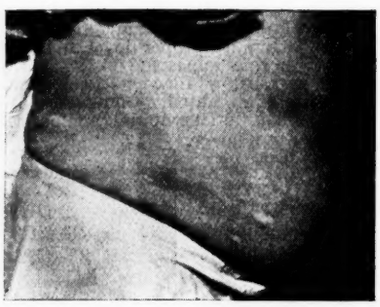

Fig. 12.

Fig. 14.

These photographs will, I think, give some impression of the very large size of herniae which may be successfully dealt with by this method. It is hardly necessary to point out that these operations are often not only prolonged but extremely difficult, and not to be undertaken without a sufficiency of help, a full knowledge of the difficulties to be encountered, and every provision which can be made for the patient's comfort and safety.

Fig. 15.

The last photograph (Fig. 15), which, owing to the closeness of the wires, is hardly as clear as I should like it to have been, shows the filigree, which I have found to be more easily manipulated than that which was first introduced by its originator, Willard Bartlett. The modification consists simply in providing *three* backbones in place of the one midrib. At a point 1 in. from the edge of the filigree, a strand of wire is carried along it, binding each pair of contiguous wires together. In the diagram this may be easily made out by the use of a hand magnifying glass. The result is that a filigree is produced which is very much stronger, and which can be introduced very much more easily than the original pattern, in which there was always a tendency for the loops to get bent and crossed during introduction. The number of loops to the inch remains the same, namely, eight, as does the standard gauge of the wire, namely, twenty-eight. The ends should measure in width about two-thirds to three-fifths o the width of the filigree at the centre.

NOTE.—Since this article has been in the press several replies have been received from patients in various parts of the world, all of which show the operation to have been successful up to date. To the stated period since operation five months must be added in every case.

ACUTE NECROSIS OF SKIN.

BY CAREY COOMBS, M.D.LOND.,
CASTLE CARY.

IN the following remarkable case the persistence of high temperature, the appearance and progress of the sore, and the fact that the first nurse had to leave because her hands became infected suggest a bacterial cause. Syphilis may be dismissed, and tuberculosis is improbable, as the patient and her children had never shown any tendency of the kind.

History of the Case.

A stout lady of yellowish complexion began to suffer from remittent fever on April 10th, 1907. There was much pain in the course of both sciatic nerves, followed after a few days by the appearance of three or four bullae, like those of ecthyma, about ½ in. in diameter, near the tuber ischii. These bullae formed sores which healed in three months. On the inside of the right knee one bulla appeared about May 11th, ½ in. in diameter; nine days later it was 3in. in diameter. Its margin was purplish-red, raised ¼ in. above the surface of the sore, which consisted of healthy granulations. In two months the whole thickness of the true skin had gone from the right leg; the limits in the front of the foot were the bases of the toes, on the sides of the foot the points of the malleoli, the upper edge being on the level of the patella. The tendon of the extensor of the toes was exposed on the dorsum of the foot. On some days more than a square inch of skin died. The process usually began by serum appearing under the epidermis at the growing point of the necrotic area; the cutis vera died in a few hours; when it was cut off, granulations were found growing beneath.

The necrosis ceased at the end of July—that is, in the tenth week—and the whole surface had skinned over in November, 1908, eighteen months after the disease started.

As a rule, the edge of the wound was well defined, purplish-red; the surface generally was clean, and islands of new skin appeared from time to time. Skin-grafts generally grew readily. But in March, 1909, the skin began to die again on the inner side of the calf, and in six weeks the surface of the sore was 3in. in diameter. The patient's temperature was above 99° at night for twenty-five weeks, the highest point being 104°. The discharge from the sore was not examined until the recurrence took place in 1909.

There can be no doubt that the patient's excellent appetite helped her recovery. The recurrence has followed four months of lack of nourishment, as her food began to return daily soon after she started a laryngeal cough. Her veins were weakened by her pregnancies, and venous bleeding has three times followed lowering the leg to the floor. Bier's bandage had the result that great pain and large blebs of blood appeared in two minutes after it was applied. The whole limb became oedematous, just as the sore was nearly healed.

Treatment.

Quinine and iron were taken throughout the illness. Opium was given at night, and was added to the ointment used for about a year—namely, lanoline containing tincture of benzoin and opium, suggested by Dr. Milner Moore. At first boric acid was used in carbolic lotion, 2½ per cent. Then, by the advice of Dr. Firth, of Bristol, iodoform was added to the lotion, and the edges of the wound were painted with hydrogen peroxide. These methods were continued during the time of rapid sloughing—ten weeks. When the skin began to die again, in March, 1909, I ionized the sore by placing the positive electrode of a Leclanché battery over layers of lint soaked in 2 per cent. zinc sulphate solution on the sore; 10 to 12 milliampères of current were used for ten minutes every two or three days. The result was to make the surface look silvery white, as though mild silver nitrate had been applied. But the use of hydrogen peroxide and iodoform lotion had a better effect, and at the end of six weeks the recurring ulceration is arrested. One ulcer, 2 in. in diameter, is closing, and seven, which are about half an inch across, are stationary.

THE Edinburgh Post-Graduate Course, which commences on August 30th and extends for four weeks from that date, promises, judging from the number of entries, to be at least as popular as its predecessors. The full number of applications for the Special Surgical Course, the attendance on which is limited to twenty-five, were indeed received almost a month prior to the date of its commencement, and some of the limited classes of the General Course, which is, as in former years, divided into two quite independent fortnights, are filling up rapidly. Among those who have entered are several who have taken out the Course in previous years.

Three Demonstrations
ON
CONGENITAL MALFORMATIONS OF PALATE, FACE, AND NECK.

GIVEN AT THE ROYAL COLLEGE OF SURGEONS, ENGLAND.

BY
PROFESSOR ARTHUR KEITH, M.D., F.R.C.S.ENG.,
CONSERVATOR OF THE MUSEUM.

II.—CONGENITAL FISTULAE OF THE LOWER LIP.

A BILATERAL cleft in the upper lip is frequently associated with a curious malformation of the lower lip, in which two fistulae or recesses open on the lower labial surface opposite the clefts in the upper lip. The orifice of each recess may be raised into a nipple-like process, which, when the mouth is shut, fits into the corresponding upper cleft. This was the condition in a specimen submitted to me by Mr. Woolcombe,[1] which was excised from the lip of a boy, aged 3 months. The orifice of the recess was situated at the apex of the papilla; its fundus, about the size of a rice-grain, lay within the substance of the lip, and was surrounded by mucous glands which opened into it. A layer of striated muscle surrounded the pocket, which in nature was clearly a localized invagination of the mucous membrane and glands of the lip. In three cases reported recently by Mr. R. C. Dunn,[2] there was one in which the recesses opened on nipple-like processes; another in which the orifices were wide and flush with the surface of the lip; while in the third the two recesses were confluent—thus forming a transverse depression on the surface of the lower lip. The condition has been described by Mr. Bland-Sutton, Mr. Arbuthnot Lane, Mr. Clutton, and Dr. Ballantyne. There is no example of this malformation in London museums. An appeal to comparative anatomy does not afford a satisfactory explanation. Seeing that the malformation is so closely associated with bilateral harelip and cleft palate, a condition which occurs normally in certain fishes, it is clearly in this vertebrate class that an explanation of the condition is to be sought. On each side of the middle line of the lower lip of sharks, and exactly in the position where these recesses are found, open a group of mucous canals which are connected with nerve endings found in fishes. It is possible that these labial recesses have some relationship with these two mucous labial organs found in selachians, but the matter requires further investigation.

TABLE II.

	A.	B.	C.*	Total.
Recesses and papillae on the lower lip ...	—	—	—	—
Median clefts on the lower lip and mandible	—	1	3	4
Naso-maxillary cleft	—	4	—	4
Lateral nasal clefts...	3	1	—	4
Mesial nasal clefts	—	—	5	5
Lateral nasal proboscis	—	—	—	—
Recess on nasal septum	—	—	—	—
Congenital perforation of nasal septum ...	1	—	—	1
Occlusion of anterior nares	2	—	—	2
Occlusion of posterior nares	—	—	—	—

* For explanation see Table III.

Median Cleft of the Lower Lip and Mandible.

Among the 250 specimens of malformation examined, only 4 showed this condition—a full-time child in the museum of St. George's Hospital and three specimens in the museum of this college, one from an ass, another from a cockatoo, and a third from a sparrow. Seeing that the lower lip and mandible arise by the fusion of right and

left halves, their immunity from median fissure, as compared with the upper lip and palate, is surprising. In four other specimens there was an apparent cleft of the lower jaw, but when the condition was more minutely examined it was seen that the lesion was really the result of a bifurcation or doubling of the buccal cavity, an attempt at the formation of twins.

Naso-maxillary Clefts.

In four fetuses, all of them nearly at full time, the maxillary process is widely separated from the lateral nasal process, so that the nasal duct is represented by a wide groove, lined by mucous membrane, and shelving from the inner angle of the eye into the nasal cavity (Fig. 9). These specimens are in the museums attached to the medical schools of St. Bartholomew's, St. Thomas's, and the "London" Hospitals. In two the cleft is on the right side and in two on the left. The nasal duct and lacrymal canaliculi are formed at the same period of development as the primitive palate—namely, during the sixth and seventh weeks, when the maxillary and lateral nasal processes fuse across the intervening groove and enclose a rod of solid epithelium between them. The rod becomes canaliculized early, but, according to Stanguleanu,[3] its nasal end does not open until the end of the eighth month. In all four specimens there was double harelip and cleft palate. In the specimen figured the cleft had evidently been continued into the temporal region on the right side, a small half-submerged polypus marking its termination on the right temple. The nasal duct appeared during the evolution of the amphibia, but in no living animal is any stage known between the complete formation of the duct as seen in amphibia, and the open skin area between the nose and eye as seen in sharks. There are no specimens in the metropolitan museums which illustrate the occurrence of dermoid cysts along the naso-maxillary fissure. Ballantyne met only three specimens of fissure in the cheek in 325 cases of congenital malformation.

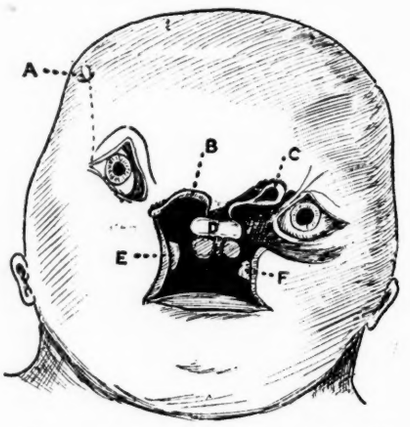

Fig. 9.—Full-time child, showing tripartite palate and naso-maxillary cleft. A, Polypus in temporal region, probably connected with a naso-maxillary cleft; B, C, right and left lateral nasal processes; D, mesial nasal process; E, F, right and left alveolar maxillary processes.

Lateral Nasal Clefts.

Through the courtesy of Mr. Raymond Johnson I was lately afforded an opportunity of examining a child which showed a very uncommon and very interesting malformation of the nose (Fig. 10). There was a complete cleft of the palate, the cleft ending anteriorly in the left nostril. The wing of the left nostril (lateral nasal process) is pulled outwards and is widely separated from the septal part of the nose (the mesial nasal process). The cleft thus lies between the mesial and lateral nasal processes on the left side. On the forehead there is an interfrontal depression covered by hair which descends towards the nasal cleft. There is no specimen exactly like this in the metropolitan museums, but there are four—three of them in the museum of this college—which help us to understand the condition. It is one due not to an arrest of the normal progress of development, but to certain bands, probably amniotic in origin, which are apt to occur in certain pathological conditions of development between the anterior nares or lips and the scalp. Professor von Winkel,[4] who regards most facial malformations as a result of amniotic adhesions, has figured a case in which such a band passed from each nostril over the forehead to end in spongy tissue on the scalp. In two specimens in the college collection the scalp and calvarium are represented by a spongy vascular mass of tissue; a deep furrow passes from this mass along the nose to a premaxillary cleft on the left side of the palate (see Fig. 11). The left ala of the nose bounds one side of the fissure in which the left nasal cavity is exposed. The right anterior naris is perfectly formed, for the furrow, as in Mr. Raymond Johnson's case, lies between the mesial and lateral nasal processes of the left side. In another specimen in the college collection epidermal filaments—adhesive cords, such as are regarded as amniotic bands—project from and close the nostrils, but the face is otherwise well formed. In a specimen of anencephalic fetus in the museum of University College Hospital Medical School the nostrils are small and closed; from the root of the nose bands of tissue, apparently amniotic in origin, are attached. Taking all these cases together, one may reasonably infer that in Mr. Raymond Johnson's case (Fig. 10) an abnormal band of epidermal or amniotic tissue had been formed at an early stage of development between the coverings of the cerebrum and buccal cavity, the depression in the forehead indicating the position of the band. Why bands should be formed so exactly in the same position in case after case requires further elucidation. We shall see presently that fissures of a similar nature occur between the mouth and the ear.

Fig. 10—Child showing nasal cleft with depression on forehead (Mr. Raymond Johnson's case). A, Ala of left nostril; B, ala of right; C, sacs of incisor teeth; D, mesial, nasal, and right maxillary elements; E, left maxillary element; F, depression on forehead marked by prolongation of scalp.

Mesial Nasal Fissures.

There is not a single museum specimen in London to illustrate the occurrence of a fissure in the mid line of the nose in the human subject, nor is there a specimen of the dermoids or of the fistulae which occasionally occur in the line of this fissure. Dr. Alex. MacLennan[5] has recently reported a case in which a tumour, dermoid in nature, occupied an area corresponding to the flat, wide inter-olfactory field of the human embryo and of the shark, and had prevented the proper apposition and fusion of the symmetrical right and left halves of the nose. An incomplete fusion in the mid line of the two halves of the external nose is comparatively common amongst animals; five specimens in the college museum illustrate the condition — three from the pig, one from the cat, and one from the dog. Mr. Bland-Sutton has drawn attention to a breed of Parisian pug dogs in which a mesial nasal fissure forms a constant feature.

Lateral Nasal Proboscis.

In certain rare cases one half of the nose is arrested at an early stage of development and assumes the form of a small proboscis, such as is shown in Fig. 12. Some eight years ago Mr. Frederic Eve gave me the opportunity of examining a boy at the London Hospital in which this abnormality was present, the proboscis being situated over the inner canthus of the right eye in place of over the left canthus, as in Fig. 10. In many specimens of cyclops the nose is represented by such a proboscis (see Fig. 15); a lateral nasal proboscis represents a half—right or left as the case may be—of the proboscis seen in a cyclops. Mr. Eve removed

the proboscis, and it was found to consist of a central pocket of mucous membrane, encapsuled in a thin plate of cartilage and covered by skin. Mucous fluid escaped from it, as in Kirchmayer's case, when the boy cried. The epithelial lining of the mucous pocket is stratified squamous at the trumpet-shaped entrance, and columnar in the rest of its extent. The primary lesion in these cases appears to be a unilateral absence or failure of the epithelial and nervous substratum of the organ of smell; the stimulus which gives rise to the full formation of the nasal cavity is apparently derived from the normally developed olfactory epithelium and olfactory bulb. The same thing is seen in connexion with the ear; when the eighth nerve is absent the external ear is malformed or absent. The case recorded by Kirchmayer[6] differs from all others: he regards the fold crossing the cleft in the lip (see Fig. 12) as the ala nasi of the left side, and the proboscis as a supernumerary structure, which therefore does not represent the left half of the nose. In all other cases the proboscis was the sole representative of the corresponding half of the nose, and it is possible that this is also the condition in Kirchmayer's case. The isolated development of half of the nose as a proboscis does not give rise to a gap or fissure on the face; the maxillary process fuses with the nasal processes of the opposite side (see Fig. 12), thus covering the area normally occupied by the missing half of the nose.

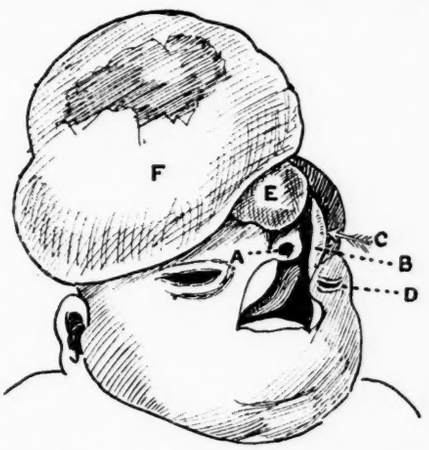

Fig. 11.—Full time child showing a cleft in nose, probably caused by an amniotic band. A, Right nostril; B, ala of left nose, bounding left side of a fissure which leads up to the masses of tissue E, F; C, the arrow points to the left nostril; D, left eye. A condition of exomphalos was also present.

Malformations of the Nasal Cavity.

In Fig. 13 is shown the preparation (No. E 169 in the college collection) of a nose of a newly-born child prepared by Mr. Shattock to show the normal development of the little mucus pocket which represents Jacobson's organ at birth. The pocket contains a small isolated area of the olfactory epithelium vestigial in man, placed on the septum near the anterior nares and the naso-palatine canals. Indeed, in many mammals the orifice of the pocket appears on the palate by the side of the incisive papilla, and is probably stimulated by the odour arising from food as it enters the mouth. Occasionally the septal pocket or recess assumes a considerable size. Mr. Hunter

Fig. 12.—Lateral nasal proboscis (after Kirchmayer).

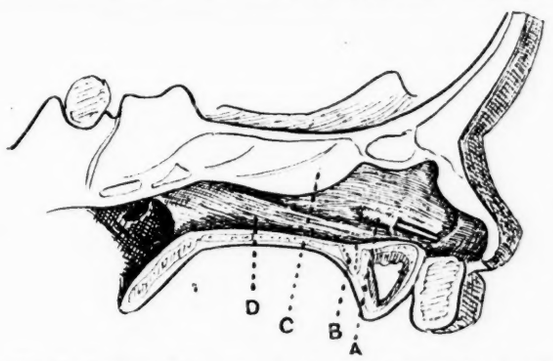

Fig. 13.—Septum of the nose, showing septal recess (Jacobson's organ), in full-time child (Mr. Shattock). A, Septal recess with glass rod inserted at orifice; B, naso-palatine canal; C, middle turbinate process; D, vomer.

Tod showed me such a case in his out-patients at the London Hospital. Mangakis has figured a case in which a pocket passed along the posterior three-fourths of the nasal septum on the left side,[7] its orifice communicating by a perforation in the septum with the orifice of the corresponding pocket situated on the right side of the septum. Ballantyne gives reference to several cases. I need only mention certain other malformations of the nasal cavity. A specimen in the Hunterian Collection of the college shows a perforation of the anterior part of the septum, in the area where Jacobson's recesses open. Gaup has shown that in the Australian porcupine (echidna) there is an absence of cartilage in the corresponding part of the nasal septum, and in the Australian duckbill the septum is perforated. Absence of and deformities of the nasal septum were mentioned already in describing cleft palate. I regret that there is not a single specimen in the metropolitan museums illustrating occlusion of the posterior nares, a condition which has been frequently described in late years. In a recent paper, Dr. W. G. Porter,[8] in describing a case, mentions that over 100 examples have been recorded. We shall see that in the condition of cyclops and often in agnathous fetuses there is occlusion of the posterior nares. The explanation offered by Hochstetter is that the nasal cavity in the region of the posterior nares is filled with a solid mass of epithelium in its earlier stages of development; in a later stage, the epithelium breaks down and the nasal cavities then communicate with the naso-pharynx. In some cases the occluding tissue contains bone. The conditions require further examination. Occlusion may occur at the anterior nares. There are two cases in the college collection. The anterior nares are represented by pits, which, as regards depth, correspond to the wings of the nose. Retzius observed that an occlusion of the anterior nares by an epithelial plug occurred during the 3rd, 4th, and 5th months of fetal development. Occlusion of the anterior nares is evidently due to an organization of this plug.

CYCLOPIA.

Although this condition is altogether beyond surgical aid, it is well worthy of study were it only to illustrate the extraordinary manner in

TABLE III.—*List of Specimens showing the Conditions of Cyclopia and Agnathia.*

	A.	B.	C.	Total.
Cyclopia with the nasal processes fused to form a proboscis	6	5	17	28
Cyclopia without a proboscis	—	4	6	10
Cyclopia combined with agnathia	6	—	12	18
Agnathia (ears lateral)	1	1	4	6
Agnathia (ears ventral)	1	3	13	17
Aprosopus (absence of the preauricular part of the face and head)	2	1	8	11
	16	14	60	90
Epignathus	2	5	4	11
Buccal fissures	2	2	2	6
	4	7	6	17

A. Human specimens in the Museum of the Royal College of Surgeons of England.
B. Human specimens in the museums of the metropolitan medical schools.
C. Specimens of vertebrate animals others than man chiefly in the Museum of the Royal College of Surgeons.

which the embryological elements of the face can adapt themselves to an altogether new combination, and produce a structure which is at once malformed and yet finished. Table III shows the great wealth of material which has been collected to illustrate the condition; the table also shows the groups into which I have arrranged the material at my disposal, but it would

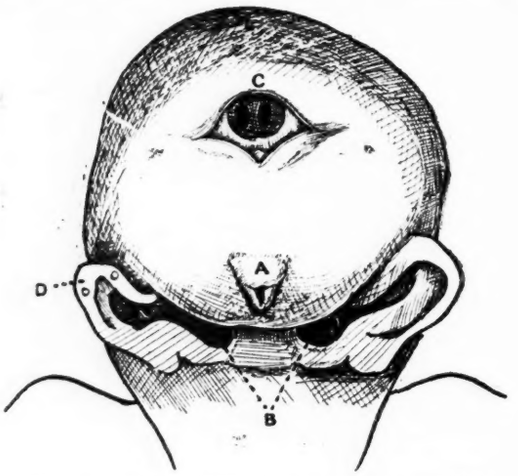

Fig. 14.—Head of fetus, showing cyclopia combined with agnathia. A, Proboscis-like mouth; B, external auditory meatus; C, combined eyeballs; D, right ear, showing two fistulae.

require a series of demonstrations to deal with the various conditions fully. Figs. 14, 15, 16, and 17 will serve to give a general idea of the lesions represented in the various groups of cases included in Table III. Fig. 14 represents a specimen in which the nasal cavities and all the parts pertaining to the nasal cavities are absent, so that the orbits and eyelids and eyeballs fuse in the middle line of the face. There is no apparent trace of the nasal processes in the specimen figured. On the other hand, the maxillary processes are fully formed and meet together. There is also present the condition known as agnathia; the mandible is represented by a mere vestige. The mouth is a minute orifice on a conical process formed out of the lips. The external auditory meatus of the one side almost meets that of the other. In the specimen (No. 263A, Royal College of Surgeons Museum) portrayed, of a child in the seventh month of development, the mandible and nasal processes, which form so large a part of the human face, have been blasted at an extremely early stage of development, and yet the maxillary processes have escaped and attempted to cover up the deficiency. In Fig. 15 is shown a section of the head of a cyclops child (No. 228, R. C. S. Museum) in which the mandible is fully developed, and the nasal processes are represented by a proboscis projecting over the median eye. The *basis cranii* in front of the pituitary body is absent, only that part of the skull base is present which is

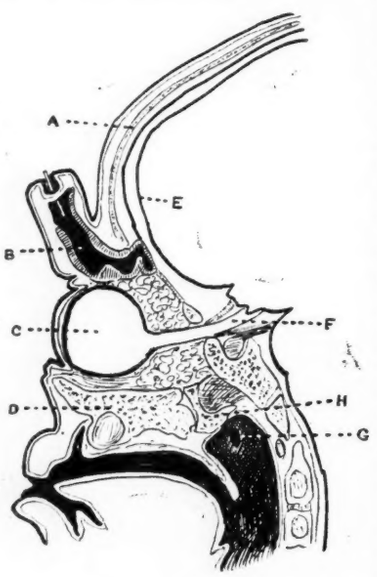

Fig. 15.—Mesial section of head of cyclops. A, Frontal bone in forehead; B, proboscis with capsule of cartilage forming inner wall of cavity; C, fused yeballs; D, superior maxilla; E, fused anterior ends of cerebral vesicles; F, fused optic nerves; G, Eustachian ube opening in naso-pharynx; H, palate bone.

developed in connexion with the primitive body axis, the notochord. The optic foramina and sphenoidal fissures form one opening. The optic nerves are fused, and in

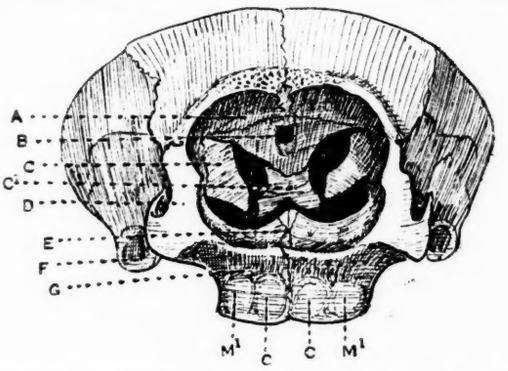

Fig. 16.—Facial part of the skull in a cyclops. A, Orbital plate of frontal; B, foramen for combined optic nerves between small wings of sphenoid; C, great wings of sphenoid: C¹, basi-sphenoid; D, malar; E, orbital process of palate bone; F, annulus tympanicus; G, superior maxilla.

such cases Mr. Stephen Mayou[9] found no nerve fibres developed within them. The olfactory lobes and nerves are absent, and the proboscis is made up of the cartilagi-

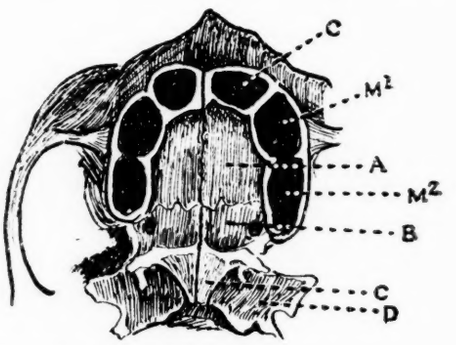

Fig. 17.—Palate in a case of cyclops. C, Socket for canine tooth; M¹, M², for first and second milk molars; A, palatal plate of maxilla; B, horizontal plate of palate; C, vertical plate of palate; D, external pterygoid plate.

nous olfactory sense capsules, which enclose a pocket of mucous membrane representing the fused olfactory pits. We are dealing here with an atrophy of all those

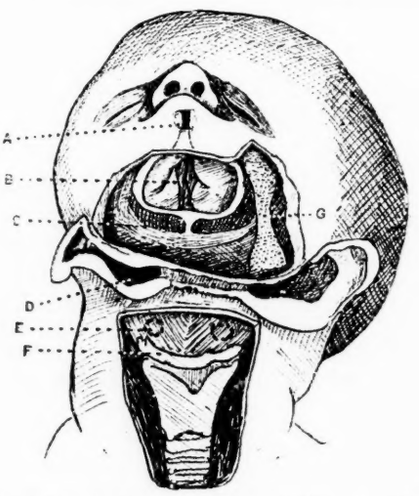

Fig. 18.—Head of full-time child, showing the condition of agnathia. A, Lips and mouth; B, buccal cavity (stomodaeum) exposed from below; C, fibro-muscular mass representing muscles of the lower jaw; D, external auditory meatus; E, mylo-hyoids, with tonsils and tongue lying deep to them; F, hyoid; G, bar of bone representing zygomatic process.

parts pertaining to the prechordal part of the skull, a part which we have reason to believe is of less antiquity than the chordal part. Fig. 16 shows the

formation of the single orbit. All the membrane-formed bones, developed in connexion with the cranial cavity and with the maxillary processes, are present, but the bones formed in connexion with the nasal processes are absent. The orbital plates of the superior maxillae and palate bones meet to form a complete and finished floor for the orbit. Although the premaxillary element is absent, the palate is neatly formed, and carries no incisor teeth, only the canine and milk molars (see Fig. 17). The position of the posterior nares is occupied by the vertical plates of the palate bone, which meet in the middle line, there being of course no vomer and no septum. As may be seen from Fig. 15, the naso-pharynx is formed and receives the Eustachian tubes.

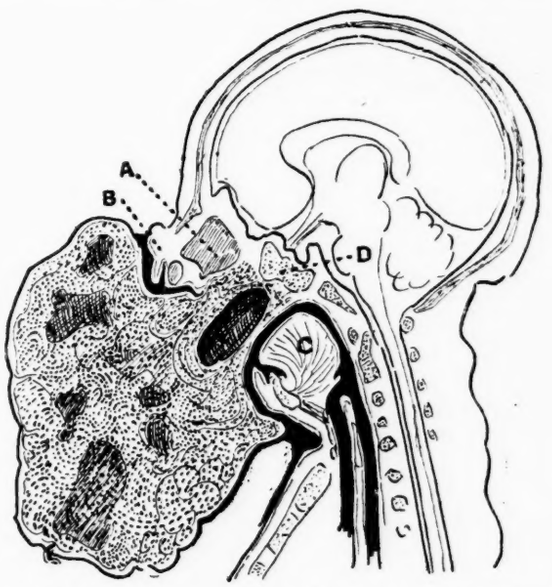

Fig. 19.—Dr. Alex. Low's case of epignathus. A, Nasal septum; B, nose, upper lip, and palate: C, tongue and lower lip; D, the basi-sphenoid.

AGNATHIA.

The condition of parts in agnathia are shown in Fig. 18. There is, in this case, a total separation of two embryological parts—the stomodaeum or primitive mouth and the pharynx (developed from the foregut), which normally become continuous before the end of the third week of development. In the figure the cavity of the stomodaeum is exposed from below, and shows the palate in a complete form on the roof of that cavity. There is no trace of the lower jaw, but a mass of fibro-muscular tissue represents its musculature. The lobules of the ears and the tympanic rings are fused on the basal surface of the skull; the malar bones and zygomatic processes occupy a position in the ventral aspect of the skull. The auditory passages open into the pharynx, which contains the tongue. The tonsils lie just above the hyoid bone (see Fig. 18), and over the mylo-hyoid and hyo-glossus muscles.

In the conditions just described the nasal or the mandibular elements of the face may be absent, or both may be wanting, but in the last group given in Table III—the condition known as "aprosopus"—the maxillary as well as the two other elements are absent, and the animal appears to terminate in a pharynx and ears.

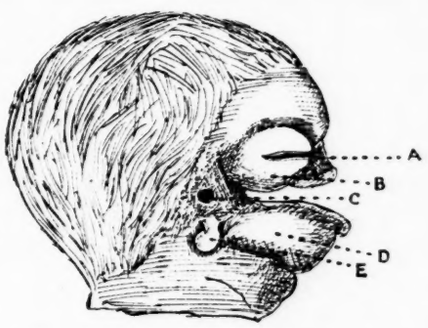

Fig. 20.—Head of human fetus showing a mandibular cleft, absence of the parts developed from the mesial nasal process and eye deformity of the external ear. A, Maxillary process; B, eyeball; C, external auditory meatus; D, mandible; E, auricularappendix.

EPIGNATHUS.

The illustration I give to represent this condition is taken from the paper on epignathus by Dr. Alex. Low,[10] in which the fullest and most accurate account of this condition is given. The specimen in the college collection, the two at St. Bartholomew's Hospital, and another at St. George's Hospital, are replicas of the specimen described by Dr. Low. Two others, one in St. Mary's Hospital and another at Guy's Hospital, differ in that the tumour, instead of projecting through the widely opened mouth, protrudes on a distorted face. The epignath may form quite a small tumour, such as represented by the specimen recently presented to the college collection (No. 5413) by Mr. Bland-Sutton. The condition is also represented in the college collection by two examples from the pig and two from kittens. The epignathous tumour mass represents a twin embryo, which, owing to the position and conditicn of the development, has to derive its blood supply from the head of the host fetus. The stalk of the tumour is attached to the base of the skull of the host fetus in the region of the basi-sphenoid—the region where the notochord, or primitive axis, ends (Fig. 19). When the face is developed the attachment of the epignathial twin becomes included in the septum of the nose and palate. The size and differentiation of such tumour masses vary widely. Fuller information regarding the nature of epignathous tumour will be found in Principal Windle's paper.[11]

BUCCAL FISSURES AND ALLIED CONDITIONS.

Occasionally clefts or open fissures are found on the cheeks of newly-born children passing from the angle of the mouth outwards towards the ear, which they may reach, as in a case recently published by Dr. Edgington, or they may stop short at the anterior border of the masseter muscle. Occasionally, as in cases noted by Ballantyne, these fissures run from some point on the upper lip and end in the lower lid of the eye. The fissures running outwards from the angle of the mouth, of which I have seen only two in London, one of which is now in the college collection, are usually supposed to represent an imperfect fusion of the mandibular and maxillary elements of the face. I am disposed to think—and the evidence on which I base my inference will be given more fully when I come to deal with supernumerary auricles—that these clefts represent not an arrest of fusion of normal elements, but fissures caused by bands which are supposed to be amniotic in origin and are apt to be formed, during morbid conditions of development, between exposed mucous surfaces such as the lips and ear, lips and eye, nares and exposed meninges. A true condition of macrostomia—of persistence of the fissure between the mandibular and maxillary processes in the human subject—is shown in Fig. 20. The external auditory meatus is present, but the external ear is represented merely by a cutaneous tag below that orifice. The orifice of the mouth extends almost to the meatus. The maxillary processes, owing to an arrest in their growth, have met internal to the orbits, thus leaving the eyeballs on the upper border of the buccal cleft. I have seen this condition in four specimens, two of them being human fetuses, and the other two malformed lambs.

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THE Third International Congress of School Hygiene will be held in Paris in Easter week (March 29th to April 2nd), 1910. Committees have been formed in all civilized countries, and these countries will be represented by delegates. All communications relative to the congress should be addressed to the General Secretary, Dr. Dufestel, 10, Boulevard Magenta, Paris.

A NOTE ON PROGNOSIS IN TETANUS.

By JOHN PATON, M.D.,

DISPENSARY SURGEON, AND SURGEON TO SEPTIC WARDS, VICTORIA INFIRMARY.

THE undernoted cases admitted to the septic wards present some points of interest. Both were under treatment or observation when symptoms of tetanus appeared. Antitetanus serum was used freely in each, and yet the course of the disease and the results of the treatment were quite different.

The following histories are founded on the notes made by Drs. Muir and Sinclair respectively:

CASE I.—J. K., aged 52, miner, was admitted on January 6th, 1909, with a large fungating mass on the outer aspect of the left thigh of two years' duration. He complained more, however, of pain in the stomach of a fortnight's duration. A large tender swelling was found in the hypogastric and left iliac regions. The patient looked ill and perspired freely. An enema was given with little result; the bowels had not moved for four days. Pulse 111, temperature 100.6°. The patient gives a history of having been in the Royal Infirmary two months earlier, when he was advised to have the leg amputated. I found marked tenderness and rigidity of the abdomen, and rigidity also of the muscles of the lower jaw and of the extremities. He was given a dose of croton oil and an injection of antitetanus serum. Films were prepared from the surface of the epitheliomatous mass, which showed the tetanus bacillus in large numbers. Under treatment by antitetanus serum and the daily application of hydrogen peroxide the rigidity gradually passed away, and by February 5th we were able to disarticulate the leg at the hip. The patient is now well.

CASE II.—J. K., aged 38, calendar finisher, was admitted on April 18th, 1909, from the dispensary, complaining of stiffness of the jaw and back of the neck of one day's duration. On Saturday, April 10th, he fell on the point of his thumb, which he dislocated at the interphalangeal joint; the skin was broken, and the head of the second phalanx protruded through the aperture. Evidently the parts had been for about an hour in this state before he came to hospital. At the dispensary the finger was steeped for half an hour in 1 in 40 carbolic solution. The dislocation was then reduced and a wet dressing applied. The finger had been dressed daily since. Suppuration started in the finger, which became red, swollen, tense, and painful. On April 17th the opening at the joint was enlarged downwards to allow the pus to escape. On admission the patient was complaining of pain in the upper left part of the abdomen and there was marked rigidity of the abdominal wall. The legs and arms were not rigid. The bowels had not moved for three days. Pulse 120, temperature 99°. Nasal feeding was tried, but was unsuccessful. An enema was also given without result; 30 grains of chloral were administered per rectum, with a nutrient enema of peptonized milk. On April 19th, in the morning, he had a spasm. Chloroform was given, and during the administration pulse and respiration ceased, but were ultimately re-established. Nutrient suppositories were given every two hours. At 9.15 a.m. next day he had another spasm. He became cyanosed, and respiration was difficult. The pulse became weak and could hardly be felt. There was not marked opisthotonos. Shortly after this the pulse could not be felt and the respirations stopped. The patient died at 9.30.

On comparing these cases it seems evident that the difference in the result was due to the difference in the site of the infection and the resulting difference in the facility for multiplication afforded to the bacillus. In Case II on *post-mortem* examination pus was found in the tendon sheath, extending to the elbow, a condition which could not be diagnosed clinically, and was not even anticipated by the pathologist, but found when looked for. In pus taken near the elbow the tetanus bacillus was discovered.

The conclusion to be drawn from these cases is that the synovial fluid of the tendon sheath is an excellent medium for the growth of the tetanus bacillus, and that steeping in 1 in 40 carbolic will not prevent the occurrence of tetanus if the tendon sheaths are exposed. When tetanus has occurred, also, the sheath of the tendon should be freely opened up, even although there is no apparent necessity to do this. From Case I also it is evident that hydrogen peroxide is capable of destroying the tetanus bacillus when it can be reached. Whether the antitetanus serum was of any value or not it is impossible to say.

I am indebted to Dr. Robert Taylor for permission to publish Case II, the patient being under his care.

The late Miss Annie Marples, of Broomfield, Sheffield, has bequeathed £2,000 each to the Sheffield Royal Hospital, the Sheffield Royal Infirmary, and the Hospital for Women at Sheffield.

THE STERILIZATION OF THE SKIN OF OPERATION AREAS.

By J. LIONEL STRETTON, L.R.C.P., M.R.C.S.,

SENIOR SURGEON, KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.

MOST surgeons will admit that occasional cases of suppuration occur in their practice for which they are unable to account. The most frequent are small stitch abscesses. They are generally attributed to the suture material, but I venture to think that such blame is often misplaced. Of all our preparations the one least under control is the sterilization of the skin. It is impossible to perform or even to supervise the process, and we are therefore dependent upon the assistant or nurse who undertakes the duty. The results we obtain prove that it is efficiently carried out in the majority of cases, but it is improbable that amongst a large number occasional defects will not occur.

The ideal method is one which can be inspected by the operator or one which will leave visible proof that it has been thoroughly carried out. If a substance could be discovered which would render the skin sterile when painted over it and leave a visible stain there would be little chance of error.

Thinking of this I was much interested in an article describing the method of skin sterilization with iodine, as used by Dr. A. Grossich, of Fiume, in the EPITOME of the JOURNAL for November 21st, 1908. It was again brought before your readers by Major Porter on February 6th, 1909, and in the following week Mr. Goodwin informed us that it is used in the clinic of Professor von Eiselsberg in the Allgemeine Krankenhaus at Vienna. The method appeared to me exactly what I desired. I was, however, very sceptical as to its efficiency, and I could not bring myself to paint such a strong solution of iodine as recommended (10 per cent.) on the skin, especially as it was directed to repeat it twice. I have seen acute dermatitis follow a single painting—a condition I should not like to produce about an operation wound. It struck me that perhaps a weaker solution might be sufficient, and I accordingly decided to try the tincture of iodine *B.P.*, which is about a quarter of the strength.

I commenced with minor cases, but I was soon so well satisfied that I extended it to others. During two months I have used it in upwards of 50 cases, the particulars of which are given in the table on page 369.

Where a "perfect" result is recorded, there was primary union without any suppuration, stitch abscess, or inflammation. In two cases there was some separation owing to deficient skin, which caused a granulating wound, but otherwise they healed immediately. Three of the goitre cases were discharged from hospital in a week.

The cases described as satisfactory were septic at the time of operation. The two cases of appendicitis were suppurative ones, requiring drainage. The colostomy wound was, of course, immediately subject to faecal contamination, and the same applies to the three colotomies, as they had to be opened immediately. All of them healed with a minimum of inflammatory trouble.

The ages of the patients varied from 2 months to 84 years. In none of them did the iodine application cause the slightest discomfort. The cases are fairly representative, and include some of the most anxious—knee-joint, fracture, hernia, etc.

If we disregard the 6 septic cases, there remain 51 consecutive successes and no failure.

The method I adopt is to paint a wide area of the surface to be operated upon with the iodine solution previous to the administration of the anaesthetic. It is painted on very freely, especially over hairy parts, and allowed to soak in. It is again painted immediately preceding the operation. After the stitches are inserted they are painted over for a margin of an inch all round.

The first and only dressing is usually made on the eighth day; the stitches are then removed, and the line of incision with a margin of 1 in. is painted with the iodine solution. If for any reason the wound requires to be inspected at an earlier date, it is painted as above described.

No previous preparation of any kind is undertaken—no bath, no scrubbing, and no shaving. The latter is an

Operations Performed with Iodine Skin Preparation.

Operation.	No.	Result.
Amputation, thigh	1	Perfect.
Amputation, breast...	2	,,
Appendicitis	2	Satisfactory.
Appendicostomy	1	Perfect.
Colostomy	1	Satisfactory.
Colotomy	3	,,
Epithelioma of lip	1	Perfect.
Fracture, malunited	1	,,
Glands in neck	2	,,
Goitre	5	,,
Hernia, strangulated	1	,,
Hernia, radical cure	6	,,
Hydrocele, radical cure	2	,,
Incisions in fingers	2	,,
Injections of antitoxin	4	,,
Knee-joint exploration	1	,,
Laparotomy exploration	1	,,
Laparotomy, mesenteric glands	1	,,
Laparotomy, ruptured tubal gestation	1	,,
Osteotomy, femur	1	,,
Paracentesis thoracis	1	,,
Plastic operations	2	,,
Trephining	2	,,
Tumours, subcutaneous	7	,,
Varicose veins	6	,,
	Total ... 57	

important point, because it saves the patient a good deal of after-discomfort. This is at variance with the method previously referred to, and combined with the weaker solution of iodine constitutes the difference.

The solution I use is made of 1 part of liq. iodi fort. *B.P.* and 3 parts of spirit. The spirit is made by mixing equal parts of spt. vini meth. and distilled water. It is practically the same strength as the tincture of the *B.P.*, but is cheaper, owing to the use of methylated spirit. This is a consideration not to be neglected in a hospital where large quantities are used.

I have no means of verifying my results by bacteriological investigations, but practically they are so uniformly satisfactory that I feel justified in bringing them forward. My reasons for advocating the use of iodine solution are:

1. That it is an efficient method of skin sterilization.
2. The surgeon can be absolutely certain that it has been applied.
3. It is quickly and easily applied.
4. It saves the patient the suffering of a preparation which is at present very lengthy and very disagreeable.
5. It obviates the necessity of shaving, which is unpleasant at the time and causes considerable irritation afterwards.
6. It saves an enormous amount of labour upon the part of assistants and nurses, and consequently a lessened expenditure.
7. It saves the cost of preparatory materials and dressings.
8. It can be used in emergency cases where preparation by the usual method is impossible.

SIR FREDERICK TREVES has intimated that a scheme to bring the British Red Cross Organization into more intimate association with the Territorial Forces will shortly be issued. It is understood that the scheme will be carried out through the county associations and the county committees of the British Red Cross Society.

SEVENTY-SEVENTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Belfast on July 23rd, 24th, 26th, 27th, 28th, 29th, and 30th.

PROCEEDINGS OF SECTIONS.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Fleet Surgeon JOHN LLOYD THOMAS, R.N., President.

PRESIDENT'S INTRODUCTORY REMARKS.

IT is my proud privilege to extend, on behalf of the British Medical Association, a very hearty welcome to all who are present to-day at this Sectional meeting, and in particular to say how glad we are to hail, with friendly hand, those delegates who are amongst us from over-sea countries and who in that way join forces with us in what is the chief object of this—like all periodical meetings of the kind—research.

The British Medical Association, I need hardly say, is ever on the alert for and spares not any pains whenever and wherever the opportunity offers of improving the conditions which make for the advancement of medical and surgical science, and we of this Section, as a dutiful child of that Association, have our part to play, and I fervently hope that, during the next three days we shall have so conducted ourselves by inquiry and by free discussion of the excellent papers which are prepared for you on each day that the parent may not be disappointed in its offspring.

These papers show much devotion and keen perception on the part of the authors, and variety characterizes them.

For obvious reasons, individuality will be found in all such contributions, and sometimes the right meaning of the author may be a little clouded, and, of course, the opinions expressed are his own, and must not of necessity be accepted on that account; for these reasons, let us have free and friendly analysis, for wholesome criticism must make for betterment, even where a paper is originally good. The more the caloric the better the steel!

As the majority of those attending this Section are of the army or navy, and have in consequence been at one time or another closely associated with the medical officers of the various nations of the world, I take this opportunity of reminding the Section of the gigantic strides made, in this instance by our American cousins, in the realm of preventive medicine. It is only recent history how that Cuba, once the hotbed of yellow fever, has been lifted out of the Slough of Despond and been placed on a working footing with the other West Indian islands; this by the strenuous and most rigid observation of modern sanitary methods.

Much more recently, indeed at the present moment, the American Government is showing its comprehensive capabilities from the point of view of practical sanitation for stamping out once more that fell disease, yellow fever, on the arid and vast plains of Panama, where, in the days not far distant (when De Lesseps endeavoured to lay a course for its waterway), the white man found his grave, when the death toll generally was more appalling than we can afford to be reminded of with equanimity. Now, thanks to the glorious advancement of medical science, this veritable graveyard is again populated by white men (and women, too), who go about their business and make it possible for the engineers to face the problem of establishing a communication between the Western Ocean and the Far Eastern Seas.

Bacteriological research having taught us in recent years that *Stegomyia* mosquitos are the bearers of yellow fever, the destruction by the prevention of breeding of these pests, in addition to the most careful and studied protection

from their bites, has procured almost complete immunity from this fell disease, so that it is no longer seriously heeded.

Quite soon, then, we shall have an everlasting monument to medical scientific research in the shape of the completed canal, which is to bear its millions on its bosom and in that way joining East with West for the universal benefit of the earth.

The *Stegomyia* species of mosquito has been found in the Philippine Islands, and that brings us face to face with the knowledge that the spread of yellow fever to the East is, in all human probability, only a matter of time. The gigantic problem of how to protect those of the Eastern nations against this disease will therefore, before long, call for the closest attention of such as work in the domain of preventive medicine.

Incidentally, I would further remark that in the Philippines medical research and administration are almost exclusively confined to officers of the army and navy, and it will be seen how the methods of strict discipline, so absolutely essential in such circumstances, are provided for. We in our turn also glory in the various establishments which are devoted to medical research, and notably in the work which is being done by the Liverpool School of Tropical Medicine, which has contributed so freely, at the expense of valuable lives and much labour, towards the relief of the human race. Here it might be noted that the negro race has come in for a large share of the benefits which science has made practicable.

I submit to you that we in the medical services of the army and navy hold a unique position for observation and for research; but I am not without the knowledge that there is one thing that mars the enjoyment of the student of research, and that is due to the fact that whilst the book of research lies largely open before one, yet without years of arduous study it cannot be understood or read, for it is written in an unknown language and in a character not familiar, whilst it presents obstacles which are apparently insuperable.

For these reasons we meet together from time to time, hoping by combination the better to understand the more complex questions of our daily lives.

The papers which will be read for your benefit at this Section deserve lofty pedestals in conspicuous places; and all we to-day ask you is for a fillip which will lead to fruitful discussion, so that we may account this meeting amongst the finger-posts in Research Land.

AN ACCOUNT OF THE OFFICERS' TRAINING CORPS, WITH SPECIAL REFERENCE TO ITS MEDICAL BRANCH.

By Colonel H. E. R. James, F.R.C.S., R.A.M.C.

For reasons of expediency and economy it is obviously unnecessary to maintain the medical establishment of the army at war strength during peace time, and upon the outbreak of war on a large scale a call will be made upon the civil medical profession for the completion of the medical establishment of the expeditionary force. About 50 per cent. of its medical complement would consist of medical men not of the regular Army Medical Service, but the existing reserve of medical officers is totally inadequate to produce this personnel.

A "Special Reserve of Officers" is designed to help to meet the case, but in the most favourable circumstances it is unlikely in the immediate future to produce the large body of officers required, as many men are apparently loth to bind themselves to undertake war service in prospective, although they would readily come forward upon the occasion arising.

It is also obvious that a medical man who knows nothing of the military service, must be at a great disadvantage under conditions of field service for a considerable time after joining, and probably at a critical period of a campaign, whereas one who has received military medical training would be at once valuable to colleagues and patients. Therefore the giving of the opportunity of the necessary training with a free hand to schools and universities, without binding the recipients to service, is a measure which promises well, even if it should not fill the Special Reserve and the Territorial Force with officers as is hoped. And this is the function of the Officers' Training Corps.

The present strength of the medical branch is approximately 350 cadets and 13 officers, that of the Officers' Training Corps altogether being between 15,000 and 16,000, inclusive of senior and junior divisions. Practically all the former university volunteer corps, as well as the corps of public schools, have transferred to the Officers' Training Corps. It is probable that other universities, besides those which already contribute medical units, will do so when the advantages of the scheme are fully known.

The universities which possess medical units at the present time are Edinburgh, Cambridge, Oxford, and London.

The organization is as yet in its infancy, and until another year has passed it will not be possible to appreciate its value in the matter of supplying the material that is hoped from it; but at least it promises well, and even if it should fall short of finding officers for the Special Reserve and the Territorial Force it must make a considerable body of medical men conversant with army routine and methods, and so fit them to serve with armies in the field in an efficient manner.

The Officers' Training Corps is quite distinct from the Territorial Force, and, although the Officers' Training Corps and the Territorial Force are administered and financed from different sources, it is intended that, as far as possible, they shall co-operate in the most advantageous manner to both.

The general scope of the training is that of the medico-military training given to young officers of the Royal Army Medical Corps at Aldershot, and it will be seen that the possession of certificate "B" exempts its holder from the whole or part of the examination for promotion to the rank of captain in the case of a Territorial officer. Training is carried out under the general direction of the Director of Military Training, by the officers of the several units. In addition to financial help and the supply of arms and equipment, the Government appoints an adjutant, who is an officer of the regular forces, to the head quarters of a contingent to assist in the training and to co-ordinate work; also non-commissioned officers as instructors, in the proportion of approximately one per unit, to assist in the training. Officers of the various arms of the regular forces are temporarily attached to units to help in the preparation of cadets for certificate "B." Courses of lectures are also provided to help in such preparation.

The theoretical work and the ordinary drill parades take place during the winter term, and the field work and camps in the summer. In the case of the medical units, all of whose cadets at the present moment are working for certificates "A" and "B" concurrently, about fifty attendances are required in the first year and thirty-five in the second, in addition to the eight days in camp in each year required to cover the drills and parades necessary for efficiency, and the lectures and demonstrations which they have the opportunity of attending.

The unit which has been chosen as a training unit for the medical branch is a B or C section of a field ambulance,* and the following reasons have weighed in its choice:

1. It is the only unit which possesses its own means of transport when mobilized, and gives a knowledge of that important branch of work.

2. It follows the movements of the body of troops of which it is a part, and is the most actively mobile unit, giving experience in a variety of work and sustaining the interest.

3. Its work differs widely from the routine work of the medical student, and affords the variety and relief which constitute a recreation (a general or stationary field hospital or an evacuation unit's work is comparatively dull).

4. It can keep touch with the other units of the university contingent during training in camp, and so maintain social intercourse.

But although this is the training unit, the training is not confined to the work of it, or any other single unit, but is of wider scope, and covers the duties of medical officers at large.

The annexed programme of work in camp will show the type of field training of the medical units:

* There are three sections in the field ambulance; Section A is the head quarter section, and its equipment in respect of ambulance wagons differs slightly from B and C.

Syllabus of Training in Camp.

For the guidance of officers in preparing syllabuses for camps of instruction in the Regular Royal Army Medical Corps and for annual camps of field medical units in the Territorial Force. This syllabus may be adapted to camps of varying duration by repeating or omitting such stages or items as may be suitable. As a rule not more than two days should be occupied by Preliminary Training, which in suitable cases may be omitted or shortened. If the instruction would thereby be rendered more efficient, the stages may be transposed and the various items interchanged or varied.

Every opportunity should be taken of giving instruction in army organization; interior economy in peace and war; reports, returns, and indents; and in sanitation and prevention of disease.

	Preliminary Training.		Intermediate Training.		
	Stage A.	Stage B.	Stage C.	Stage D.	Stage E.
Morning, 1 hour	Squad and Company drill	Squad and Company drill	Hand seats and improvised carriage of patients	Preparing operating tent and tents for sick. Preparing G.S. wagons and country wagons for carriage of wounded	F. A. formation and movements.
Forenoon, 1 hr.	Stretcher exercises	Equipping, loading, and unloading ambulance wagons	Lecture on Geneva Convention and system of removal of sick and wounded from front to base	Preparing G.S. wagons and country wagons for carriage of wounded and practice in loading and unloading wounded	Collecting wounded (including improvised carriage, formation of dressing station), laying out F.A. encampment and reception of wounded. Preparation of bivouacs and shelters.
Forenoon, 2 hrs.	Checking equipment and examining contents	Packing and loading F.A. equipment	First aid and removal of wounded according to injuries and carriage required	Practical instruction in making field kitchens and latrines and in methods of refuse disposal	
Afternoon ...	N.C.O.'s and men—Tent pitching and instruction in guard and piquet duties Officers—Lecture on field medical organization and the *rôles* of medical units	N.C.O.'s and men—Tent pitching and preparing tents for patients Officers—Lectures on duties in camp, on line of march, and in the field. Combined training Ch. I, II, and III	N.C.O.'s and men—Demonstration of water purification and explanation of sanitary methods in the field Officers—Map reading and study of ground, selection of sites for encampments, billets, hospitals, etc.	N.C.O.'s and men—Packing and loading F.A. equipment. Forms and returns in the field Officers—Map reading and study of ground, estimation of distance with reference to the ordinary danger zones for rifles and shell fire. Selection of sites for dressing station	Coupling horses, mounting and dismounting wounded men Demonstration in stable management, in horse lines

The Transport Section of the Royal Army Medical Corps Territorial Force will attend such of above as are applicable, and in addition will be instructed in riding, driving, stable management, fitting saddlery and harness, and the care of horses.

Advanced Training.				
Stage F.	Stage G.	Stage H.	Stage I.	Stage J.
Exercise as a unit in the field, as if with troops holding a defensive position Large numbers of wounded to be collected, treated, and classified for disposal Reports and returns to be prepared	Do.; as if with troops during an attack on defended positions	Do.; as if with troops during a battle of encounter	Do.; as if with troops during a retirement	Exercise as a unit in the field with other troops, having regard to the size and nature of the medical unit represented.

The oral examination includes: The general system of organization of the army, the system of command, organization, discipline and administration of a squadron, battery, or company in peace and war; duties in the field as applicable to each arm; marches, outposts, map reading, reconnaissances (including rough field sketches), attack and defence, including engineering details contained in Part I., *Manual of Military Engineering, 1905*, with the exception of Chapters XII, XIV, and XVI; and any duty or work which a captain may fairly be called upon to perform in the field.

The medical certificate "B" requires a knowledge of the following subjects:

Written examination: War establishments and organization of field medical units; military law and King's Regulations as for lieutenant to captain. Oral examination: Work of medical units in the field; sanitation and other duties in barracks, camp, and on the line of march; map reading; general system of organization of the army; the system of command, organization, discipline and administration of a company in peace time, and a field unit in war.

Semaphore signalling may be taken as an optional subject for certificate "A," and the history of the British army (prescribed period) for "B."

The medical cadet has several courses open to him. He may:

1. Take certificate "A" in the junior division in his school corps, and certificate "B" in his university combatant corps, with the addition of medical subjects in both cases (this involves an extra year in the medical unit).
2. Take both certificates in his university combatant corps.
3. Take "A" in his school and "B" in his university medical corps.
4. Take both in his university medical corps.

The optimum training is obtained in case 3, as the cadet is thoroughly grounded in military matters, and can devote the whole of his energies to the medico-military subjects in his university medical unit.

Holders of these certificates have certain advantages, which are as follows:

	Certificate "A" will entitle the Holder—	Certificates "A" and "B" will entitle the Holder—
(i) Should he take a commission in the Special Reserve	(i) To a reduction of the probationary training by 4 months, or 14 days, according as the normal period is 12 months or 3 months	(i) (*a*) To a reduction of the probationary training by 8 months, or 1 month, according as the normal period is 12 months or 3 months. (*b*) To a gratuity of £35, payable at the same time as his outfit allowance.
(ii) Should he take a Territorial commission	(ii) To exemption from the whole or part of the examination for promotion to the rank of lieutenant	(ii) To exemption from the whole or part of the examination for promotion to the rank of captain.
(iii) Should he offer himself as a candidate for Woolwich or Sandhurst	(iii) To receive 200 marks in the competitive examination held by the Civil Service Commissioners for entrance to those establishments	
(iv) Should he offer himself as a candidate for a commission in the Royal Army Medical Corps	(iv) To receive 1 per cent. of the maximum number of marks allotted to the compulsory subjects in the entrance examination	(iv) To receive 2 per cent. of the maximum number of marks allotted to the compulsory subjects in the entrance examination.

Uniform, of a pattern chosen by the school or university, is supplied by Government, conditionally upon the recipient becoming an efficient, and arms and equipment

are supplied to the several units. The expenses of cadets in camp, and of their journeys from their head quarters to and from camp, are defrayed by Government at a fixed rate. Members, therefore, do not incur any personal expense by joining.

The training has two phases, and can be condensed into two years. In that case, which is only applicable to the senior division, the two phases are concurrent. Two certificates may be obtained: Certificate "A" at the end of the first phase, and "B" at the end of the second. "A" can be got in the junior or senior division; "B" in the senior division only, and cannot be obtained except by a holder of "A." A minimum of one year's service is required for "A," and of two years for "B," but, as already stated, the two may run concurrently. The cadet must have made himself an "efficient" in these years. To qualify as an efficient in the first year, attendance at thirty parades of not less than forty-five minutes of actual instruction, and at a camp of eight days' duration, and at the inspection is essential; in the second year fifteen drills and a similar camp and inspection are required.

The subjects of examination for certificates "A" and "B" vary according to the branch to which the cadet belongs; but the "A" obtained in the junior division is by examination in infantry subjects, and is accepted in all branches, with the addition of extra subjects for "B" in corps other than infantry. This "all arms" examination for "A" is written, oral and practical, and is in the following subjects: Infantry drill in training; squad and company drill; the tactical handling of a section of at least twenty-five men; care of arms; mechanism of the rifle; elementary musketry exercises.

The medical certificate "A" is obtained by examination in the following subjects, contained in the *Royal Army Medical Corps Training*: Elementary anatomy and physiology; bandaging, as for the instruction of soldiers of the Royal Army Medical Corps; treatment of wounds, etc. Field cooking; the construction of kitchens and latrines; corps exercises; squad and company drill.

The examination is partly written and partly practical and oral.

Certificate "B" in the different branches also varies in its subjects. Here, again, there is an "all arms" certificate, which is devised for infantry, and which is valid for other corps, with the addition of corps special subjects. The written examination for the "all arms" certificate includes field sketching, tactics, military engineering, map reading, scales, use of compass, attack and defence of a house, post, or position; a simple problem in tactics, engineering, and topography, entailing the employment of all arms; military law and King's Regulations as for promotion from lieutenant to captain (books allowed).

The general object of this organization is to provide officers for the regular army, for the Special Reserve of Officers, and for the Territorial Force; and its method of working is to give a standardized measure of military training to boys and young men of the educated classes at schools and universities.

The university contingents form the senior and the school contingents the junior division of the Officers' Training Corps. Training in the junior division is practically confined to that of infantry; in the senior division, cavalry, artillery, engineers, and medical service are also represented, in addition to infantry. For the purpose of training, training units are formed, for example, squadrons of cavalry, batteries of artillery, companies of engineers, and, in the medical branch, sections of a field ambulance. The infantry is formed into companies and battalions.

The contingent produced by a school or university may comprise one or more of such units, each of which, to obtain recognition by the Army Council, must number thirty cadets at least.

The Officers' Training Corps is under the immediate control of the War Office in point of finance, and the school or university producing a contingent makes itself responsible for the training of such contingent, the Director of Military Training at the War Office maintaining control over the training.

In the case of a university a military education committee must be formed, which comprises as members officers of the Officers' Training Corps contingent of the university.

The personnel of the Officers' Training Corps consists of officers of the Territorial Force seconded for duty with the Officers' Training Corps, and cadets who, as indicated above, are students of schools and universities or colleges, and others who are permitted to join contingents under the aegis of these institutions.

The training units of the Officers' Training Corps are not mobilized in time of general mobilization, nor are the cadets under military law nor under any obligation to join the army, Regular or Territorial, by reason of belonging to the Officers' Training Corps.

Cadets serve under a contract drawn up by the several universities and schools to whose contingent they belong. The contract is approved by the War Office, and contains clauses giving an undertaking to obey orders, and specifying the period of engagement to serve and penalties in default. The officers, in the case of schools, are usually masters, and in the case of universities members of the university staff and undergraduates. In schools there are also cadet officers, who are not, as in the case of other officers, of the Territorial Force.

Discipline is practically left in the hands of the school and university authorities, and the only penalty for misconduct is summary dismissal by the officer commanding; in case of failure to complete the proper term of service or to become efficient, or to obtain the necessary certificate, fines are inflicted to meet the loss which would be entailed on the corps fund by such default.

No physical examination is imposed by the regulations upon applicants to join, although it is within the power of the body offering the contingent to require such examination of recruit cadets for its contingent.

The only physical qualification required by the regulations is that the cadet should be physically able to perform his duties to the satisfaction of his commanding officer, by whom also he must be accepted before being allowed to join.

It will appear from this that the scheme is generous in its conception, as it gives training to men who may not be able to qualify physically for the Regular or Territorial services, and does not bind any one undergoing the training to join these services.

ON PHYSICAL TRAINING OF RECRUITS IN THE ARMY.

By Lieutenant-Colonel R. Porter, M.B., C.M., R.A.M.C.

I only intend to give a very short description of the methods employed in the physical training of recruits, as I think a practical demonstration will give you a more useful knowledge of the training employed than any description. I have a class of recruits here who have recently completed a three months' course of training, and the instructor will give you by means of this class a practical demonstration of how this system of physical drill is conducted.

The exercises are classified by tables, each table comprising a certain number of exercises requiring a certain time to complete, according to the physical development and physical fitness of the recruit. The lessons are progressive, and are arranged according to the capacity of the individuals for whom they are intended, increasing in difficulty from week to week so as to ensure steady and systematic progress throughout the whole course. The exercises are based mainly on what is known as the Swedish system, a system which was introduced into that country many years ago by Ling, and owing to its general adoption amongst the young population in Sweden it is said to have improved the general physique of the nation in a marked degree.

The object of physical training should be to increase intelligence, quickness of movement, power of endurance, and capacity for work; in other words, physical training means the gradual training of the heart and lungs to accommodate themselves to the demands of muscular exertion and the undertaking of fatiguing exercises without undue distress.

The recruit on joining the army at the age of 18 is not physically fit to undertake the duties of a soldier without considerable preparation, and it is by this system of physical training that he is prepared for the strenuous

and active life which is now required of a soldier. In carrying out these exercises his body is gradually and harmoniously developed, faulty postures are corrected, and at the end of his training his standard of physical fitness is enormously increased. All this is done without any undue strain to the body, and in practice it is found that generally recruits after three or four months' training improve in weight, chest capacity, and the harmonious working of heart and lungs is well seen in their power of running one mile without distress, as shown by their respiration and pulse-rate. The methods by which this training is carried out are based, as I have said, on the Swedish system; it has been introduced into our army within the last few years, and differs entirely from any system of physical training previously employed in England.

The methods of training in vogue in the army a few years ago, and indeed in our universities and schools, were very unscientific, and opposed to all physiological laws. The practical application of the old system of physical training tended to produce a state of abnormal muscular development. No attention whatever was paid to the circulatory or respiratory systems; the great object aimed at was to produce abnormally large muscles in legs and arms, and this abnormal muscular development often interfered with the natural movements of the body. I have seen the adductor muscle of the thigh so largely developed under the old system that a march could not be undertaken without constant chafing of the skin on the inner side of the thighs; thus the system defeated the very object which it ought to have kept in view. In addition, the strain caused by lifting heavy dumb-bells and bar-bells often caused serious and grave conditions of the circulatory system.

Under our present system of training this has all been changed, and what is aimed at now is the harmonious development of the whole body without strain to muscular, respiratory, or circulatory systems. The exercises are arranged in the following groups, namely: Group A, leg exercises; B, neck exercises; C, arm exercises; D, span bending; E, heaving exercises; F, balance exercises; G, lateral exercises; H, abdominal exercises; I, dorsal exercises; J, marching and running; K, jumping and vaulting; L, corrective exercises.

In the daily lessons exercises are selected from every group, easy exercises being employed at the commencement of the lesson to prepare the body gradually for stronger work. The stronger exercises are then taken, the more vigorous being taken towards the end, and the lesson is wound up with a few easy exercises, so that the circulation, which has been considerably accelerated by the stronger exercises, is sufficiently restored to its more normal state to enable the pupil to proceed to his other work without any feeling of undue agitation or fatigue.

Great care is taken to avoid hurry in physical training. It is impossible to obtain good results by cramming more work into the same or less time.

Application of the System.

Every exercise is performed from a certain position, termed the "starting position." For the simpler movements the position of "attention" is the starting position, but for complex movements other positions are indicated.

The position of attention occupies a very important place in the system of physical training, as to effect this attitude the spinal muscles must be engaged, and if the heels are kept together the maintenance of the position of attention, or the erect position, is one which requires a certain amount of muscular effort, and somewhat difficult for those whose trunk muscles are not properly developed. To maintain the equilibrium of the body in this position requires a certain amount of conscious effort at first, which after a period of training would be maintained by unconscious effort.

Standing erect, or at the position of attention, involves a large number of muscles, and the muscular effort is increased if the heels are kept together, for the base of support is a narrow one and the balance must be finely adjusted. From this position graded exercises are introduced to disturb the equilibrium of the body which will increase the muscular effort to maintain the erect posture. In this way the trunk muscles are developed, and the defects associated with insufficient development will be corrected and a natural erect carriage will be maintained without any effort.

Arm and leg movements are few and simple, and the same movements are applied to various exercises. Arm movements are classified as follows: "Outward," "upward," and "forward stretching," "raising," "swinging," and "flinging." The leg movements are "feet placing," "heels raising," and "leg raising" "forward" and "outward." Their chief purpose is to disturb equilibrium. At the practical demonstration you will be able to see these movements carried out by the class, but perhaps I can make it clearer by a little demonstration of what I mean.

The pupil is standing in the position of attention, and receives the command "Hips firm." The hands are placed on the hips, thus the weight of the arms is transferred to the pelvis; this increases stability. The command "Heels raise" follows. The movement is executed slowly, and as the body weight is gradually transferred from the feet to the toes the base of support, which was narrow at the commencement of the movement, is now narrower, and therefore equilibrium is made more difficult to maintain. Then the command "Full knees bend." The body placed on the toes is slowly lowered; when in position the pupil may receive the command "Arms outward," or "Upward stretch." The movement of the arms increases the difficulty of maintaining balance, and proportionally produces developmental effect in the muscles engaged in maintaining the erect posture.

The object we aim at in these physical exercises, particularly of the arms and legs, is not exactly the development of the different muscles engaged but their increased efficiency. We do not wish to increase muscular development to an abnormal degree, but what we aim at rather is to increase the efficiency of the muscles and their power of resisting fatigue. Abnormally large muscles in the extremities are a disadvantage, and are only produced by exercising a constant strain on the muscular fibres, which is entirely opposed to the principles for which the system is provided.

Generally speaking, in all recruits the trunk muscles require development to correct faulty postures acquired in civil life. Stability is necessary if work is to be performed efficiently and economically; therefore, the muscles which maintain stability must be systematically developed. Muscular activity is accompanied by an increase in the production of carbonic acid and heat, and the breathing is in consequence increased so that the additional carbonic acid and watery vapour, together with the surplus heat, may be discharged from the lungs. The increased breathing also enables the body to obtain more oxygen, and the heart beat is at the same time quickened, so that the blood is enabled the more rapidly to pass through the lungs, and there give up carbonic acid and take up oxygen. To enable this to be done, the heart must regulate its beats so that the blood may be sent rapidly through the lungs in accordance with the needs of the body. If the lungs and heart do not work properly together during exercise, breathlessness is the result. By progressive exercise, the harmonious working of the heart and lungs during exercise can be improved and the power of endurance developed.

Over-distension of the chest is injurious, as it is liable to diminish the elasticity of the lungs and render them less efficient. But exercise performed with a good carriage of the spinal column and directed towards securing the co-ordinate working of the heart and lungs is in the highest degree beneficial. The judicious and progressive employment of marching, running, jumping, and kindred exercises is the best means of obtaining this co-ordination.

In the course of the physical training, running and jumping exercises are performed, and at first running is always done at a moderate pace and for short distances, such as 60 or 70 yards, then marching in quick time until normal breathing is restored. Distances are gradually increased until a mile or more is covered at a moderate pace, and this can be generally done without undue fatigue or any distress. The running exercises are performed in squads composed of the same stage of training. These running exercises are occasionally changed and the men are made to race with each other at full speed for 75 or 100 yards. This practice is of great value in keeping the

men quick and active, and, moreover, introduces a spirit of emulation and keenness, with advantage to all.

The usual time occupied in training recruits so as to prepare them for the active work of a soldier is six months, namely, three months at the regimental dépôt, and three months after joining their respective battalions. During this time they are constantly kept under medical supervision, and if it is seen that at any time the work is too severe or likely to produce strain in any individual, he is put back to a class where the exercises are more simple and the work less severe.

I would invite the special attention of those members present who are connected with schools, or who have had the experience of physical training amongst boys or girls, to the practical demonstration, as I think this form of physical training is eminently suitable as a part of school training. In the compilation of this paper I am indebted to the *Manual of Physical Training* used in the army and some articles recently written in the *R.A.M.C. Journal*, particularly one by Lieutenant-Colonel Bull, R.A.M.C.

DISCUSSION.

On conclusion of the paper a practical demonstration by a party of recruits of the 1st Battalion Royal Sussex Regiment (kindly sent for the purpose by Lieutenant-Colonel Scaife commanding the battalion in Belfast), was given in the grounds adjoining the university building.

Colonel T. H. HENDLEY said that he would like to ask whether the system they had seen so well practised was according to the pure Swedish method, or whether it was mixed with the Danish system or any other, and whether Colonel Porter considered it the best at present in use. Further, whether the increase of chest measurement, if any, was permanent, or whether there was undue strain on the heart and arteries. He thought he had seen cases where injury had been done. Lastly, was the system useful in the case of old men or injurious to them, or valuable in reducing obesity?

Staff-Surgeon E. Cox asked if there were any other system used for developing muscle. The system they had seen differed absolutely from, say, that of Sandow, who insists on some mechanical resistance to the movement. Was the Swedish system found sufficient for all purposes?

The PRESIDENT said that the present system of physical training would appear to be intended for universal development and for the making efficient of all muscles, and not the local and conspicuous development of special muscles, which had been the aim of many systems, chiefly for personal advertisement.

Colonel PORTER, in reply, said the system was founded on the Swedish system introduced by Ling. He might say that if an individual was sound, it was suitable for any age. He had known numbers of officers of 50 and more who had gone through the course with advantage, chest measurement and weight being increased. The system did not aim at great muscular development, but rather at efficiency of muscle and the harmonious co-ordination between heart and lungs. There was no apparatus necessary for carrying out the exercises.

CONTRAST BETWEEN THE TREATMENT OF THE WOUNDED UNDER THE MOGHUL EMPERORS AND KING EDWARD VII, EMPEROR OF INDIA.

By Colonel T. H. HENDLEY, C.I.E., V.D.,
Indian Medical Service (Retired).

INDIA, for some centuries before the advent of the British was the theatre of so many wars and of so much strife that we may well inquire whether, amidst scenes of such universal violence, anything was done to relieve the wounded in battle, and, if so, how their treatment contrasts with that of the present day. Before the time of the Emperor Akbar (1556 to 1603) we have practically no information, and very little more during the whole of the Moghul period. Mr. Irvine, I.C.S., in his *Account of the Army of the Indian Moghuls* (1903), writes as follows: "The wounded seem to have been left mostly to their fate; there was no organization for their succour, nor any attempt to heal their wounds; this was left to their relations and friends." He tells us, however, that commanders of from 2,000 to 4,000 horse had to maintain two leeches, surgeons, or jarahs, and for lower ranks one, or at a later time, none, as against from eight to two farriers. Such provision was, of course, wholly insignificant. I think this information can be supplemented, and especially from my own experience of twenty-seven years of the armies of native rulers in Rajputana.

Some writers hold that Indian battles were less sanguinary than those of Europe; others believe that the slaughter will in the future everywhere be much greater than formerly. The truth seems to be that a good deal of Indian warfare was on a small scale, and perhaps occasionally was somewhat unreal, as, for instance, when a noble went into rebellion. In the year 1872 I accompanied a force which the Maharajah of Jodhpur sent out to subdue a son who had risen against him. A large town was invested; regular daily raids were made by those inside the walls, and duly resisted by the besiegers, who in turn made demonstrations against the garrison, but rarely at mealtimes or at night, and after a few days, and accidental losses on both sides, the rebel yielded, and was forgiven. Such was no uncommon incident under native rule; but Indian as well as European histories are full of descriptions of terrible struggles and of fearful losses on an enormous scale. Perhaps of these the most striking and instructive is that of the great battle of Panipat, on January 1st, 1761, when the combined armies of the principal Mahratta leaders met and were overthrown by the famous Rohilla chief, Ahmed Shah Abdali or Durani. This conflict made an enormous impression on the age, not only for its political importance, but because of the awful losses which took place. An appalling account is given in the Asiatic Researches, 1782, by Casi Rajah Pundit, an eye-witness. He says that both sides fought with spears, swords, battle-axes, and even daggers for near an hour, but suddenly the Mahrattas collapsed and fled, "leaving the battlefield covered with heaps of slain. The victors pursued with the utmost fury and gave no quarter." The Shah at an early stage had even driven back with his household troops many of his own men who were endeavouring to retreat, going so far as to kill some. One of the Bengal rulers always employed one very strong man in ten to stir up his comrades in this manner. The Pundit adds that of every description of people, men, women, and children, there were said to be 500,000 souls in the Mahratta camp, of whom the greater part were slain or taken prisoners, and of those who escaped from the field and the pursuit many were destroyed by the peasantry. This latter action was, indeed, characteristic of the Mahratta wars. Nearly 40,000 prisoners were taken alive; 6,000 or 7,000 were protected by Shuja-ud-daula, of Oudh, the ally of the Shah, but the rest were nearly all killed by the cruel Duranis, who said in jest that when they left their own country they had promised their female relations that when they should defeat the unbelievers they would kill a few of them on their account in order that they also might possess merit in the sight of God. Thus, in the Durani camp every tent, except those of the Shah and his principal officers, had piled up before its door heaps of heads. Irvine tells us that even the Moghuls used to erect such ghastly trophies on the wayside. The Duranis wanted to stuff the body of Biswás Rao, a youth of 17, the nominal Mahratta commander-in-chief, in order to carry it to Kabul, but were restrained from so doing by the Nawab of Oudh, who represented that it was always the custom of Hindustan after a victory to give up the bodies of chiefs to receive the proper obsequies. This is some proof that the Hindustanis were more humane than the foreigners, but there is no indication that the lower orders received such consideration. The Nawab did, indeed, send some hundreds of watermen to wash the bodies of the slain and to look for those of the chiefs. The rest, it seems, were neglected. It is noted that the body of one of the great chiefs had no fewer than forty wounds upon it.

The Shah found 32 heaps of slain, most of them killed near each other as they fought. The ditch of the Mahratta camp and the jungles all over the neighbourhood were filled with slain. Even the women and children who had crowded into the town were butchered next day in cold blood by the Afghans. The Mussulman army numbered 41,800 horse, 38,000 foot, and four times the number of irregulars; there were 70 or 80 cannon. The Mahrattas

had 55,000 horse, 15,000 foot, and irregulars innumerable; there were 200 cannon, with small arms and rockets in immense numbers. There had been preliminary skirmishes for three months, and on one occasion no fewer than 20,000 camp followers had been put to the sword when foraging, and their dead bodies were piled up into a mountain. Our own camp followers, owing to their recklessness, were massacred in the same way a century ago, and probably would be to this day in certain Eastern countries. The enemy often deterred them, as they thought, by cutting off their ears, noses, and hands, instead of killing them. For neither combatant nor non-combatant was there any hope, unless their comrades were able to drag them from the field into the villages or camps, where, perchance, they might find shelter. A favourite leader might be rescued by his men; but, as all persons of distinction wore jewellery or carried valuables, they were most frequently cut down and plundered by the soldiers or peasantry. As to the rich, there was little chance of their lives being spared for ransom, as in the days of chivalry in Europe. Colonel James Skinner, a famous soldier of fortune, tells us that Madhoji Sindeah was pursued for miles by a fierce Afghan, who cut him down and despoiled him. He was afterwards picked up by a waterman, ignorant of his rank, taken into Bhartpur, and tended until he recovered. Sindeah never forgot his preserver, nor did he forget the Afghan, whose fierce looks and persistent pursuit haunted him to his dying day.

The terrible picture of the battle of Panipat shows, on a large scale, what was always happening in the dark ages of India. The historian, Orme, depicts still greater horrors in the case of sieges. John Shipp gives even more graphic accounts of the terrible scenes on such occasions, as of the sieges of Damun, Hatras, and Bhartpur. On the former occasions even women and children suffered death and mutilation because the besieged would not allow them to leave the fort. The sufferings of our own men in the breaches at Bhartpur were appalling, and would not be believed, but far worse were the tortures inflicted by the Pindaris, or hordes of brigands who ravaged the country.

The Indian people, male and female, could hardly understand the efforts to save life and suffering which were made by European generals and their men. In many cases in the native wars little indeed could have been done because the losses were so great and so sudden. Thus, for example, General Briggs, quoting Skinner, writes that in the battle of Patan in 1798 between Sindeah and the Rajputs, 10,000 Rahtore cavalry rode down the brigade of Duderneque, leaving only 200 men out of 8,000, and even trampled over 1,500 of their own men who had been destroyed by the cannon of their opponents. They went on to attack 40,000 Mahratta cavalry of the second line, beat the whole, and chased them for miles, though at last they were overcome by another brigade. The famous Count de Boigne had even more astounding experiences at the battle of Mairta. It has been said that such acts as these were due to the universal custom of taking large doses of opium, but there is another side to that question. To take opium together is almost sacramental on certain occasions. It binds Rajputs to defend each other to the death. Moreover, as a young chief told me, it has its medical and religious uses, for not only does it tend to ease the pain of wounds and to support during the first shock, but its constipating effect is very beneficial, inasmuch as if a man should be fatally wounded and die while attacked with diarrhoea his soul might escape by an impure channel, whereas it should leave the body by an opening above the neck. This is a well-known objection amongst Hindus to death by hanging. Opium, no doubt, is also used for stimulation. Elephants, for war purposes, are given drugs by the Indians with the same object, and Shipp tell us that the Mahrattas fed their horses on mhowa *(Bassia latifolia)* berries, which enabled them to undergo incredible exertions.

We may now ask what was the character of the wounds which were inflicted in these desperate battles, and what kind of weapons were employed. Besides spears, swords, and daggers of great variety, and in later times firearms of many sorts, bows and arrows, steel quoits, maces armed with spikes, battle-axes and crowbills, swords with teeth for cutting chain armour, weapons shaped like tigers' claws, and every kind of lethal instrument which the mind and devilry of man could conceive were used. I myself have illustrated about 150 weapons of offence in one work alone. Irvine devotes 78 pages of his book to short descriptions of them, and observes that, "It is not to be supposed that the whole were carried by any man at one time; but a great number were so carried, and in a large army all of them were to be found in some way or another." Men often carried two swords, a spear, a matchlock, a pair of pistols, and a dagger or two; nor need any of them be unnecessary, because, as the present Maharajah of Idar explained to me, a warrior might be undermost and perhaps only be able to reach a dagger in his boot with which to disable his foe. In sport, again, many a man, when knocked over by a tiger, has been able to save himself by making a deep cut in his enemy's abdomen with the katár from his waist-belt. This is a flat dagger which is sometimes made to open like a pair of scissors. It is a national weapon of the Hindus. There is a small pillow sword, or zafr-i-takiya, which chiefs sometimes found useful in cases of sudden attack while seated in durbar. The Maharajah of Karauli received me in audience wearing a knife handy in his neck. Sivaji tore open the bowels of Afzul Khan, his enemy, with the wagnak, a weapon shaped like a tiger's claws, which he concealed in his hand. Arrows were barbed and poisoned, and could produce fearful wounds—as, indeed, could most of the weapons that have been named. The ordinary Indian cutting swords are capable, moreover, of inflicting large wounds in the hands of a determined man. I myself saw the bodies of several men and women which were slashed almost to pieces by an infuriated relative.

Such was the nature of the work which had to be treated if the victims of war ever got into the surgeon's hands. We may therefore ask at this point what kind of professional treatment was available. Even at the best it was that of the age, and that was much the same as in Europe before the time of Paré, or even as late as John Hunter. In the East, as in the West, surgery was left to quacks, or barbers, and in India to jarahs, who were combinations of both. They used salves, or plunged stumps into boiling oil, specially after gunshot wounds, which were regarded in India, as in Europe, as being poisoned. These practices and ideas subsisted in the armies of the native princes almost down to my own time. A case of the use of boiling oil had recently occurred when I arrived, in 1871, in the Bhil country, and jarahs were attached to all native regiments of the Jeypore State, who dressed wounds, shaved sepoys if required, or acted as chiropodists. Medical treatment was for Mohammedans in the hands of Hakims, who followed the Yunani or Greek system of Galen and Avicenna; and, for Hindus, of Vaids, who practised the humoral methods of the old Sanskrit writers.

Aid for the wounded, either on the field or afterwards, cannot be in advance of the general knowledge of the subject, though it might be worse. Brigade-Surgeon R. Gray, late of the Indian Medical Service, tells me that he was deputed at the time of the Kabul war of 1878 to examine the surgical equipment of the levies of the Punjab princes. He found a number of jarahs who were furnished with archaic instruments, such as are figured in the book on Aryan Medical Science, by the Thakur Sahib of Gondul, and which might have been used in the days of Xenophon. They had also numerous bags of drugs. Honiberger, who was physician at the court of Ranjit Singh seventy years ago, and, as such also perhaps in charge of his powder factories, states that the jarahs did not know how to bind up an artery, and amputation was a process of which they had not even heard. These illustrations afford some idea of the measure of the skill which was available even quite recently. The Moghuls, perhaps, realized that the surgical knowledge of that time might be improved, as the Emperor Aurangzeb, at the end of the eighteenth century, employed French surgeons and such a physician as the celebrated Bernier, who describes a great battle between Dara and Aurangzeb in which cannon linked together, swivel guns, and arrows in clouds were used. Garrisons were slaughtered in cold blood, and Dara's head was cut off. He has nothing to tell us of surgery, but he thought the medical treatment was effective. The mention of Xenophon by Dr. Gray led me to look up the *Anabasis*, in which I found a statement which seems to

explain the reason of the almost universal Eastern practice of mutilating the dead. He says the Greeks, of their own impulse, mutilated the dead bodies, in order that the sight of them might be as horrible as possible to the enemy. Xenophon appointed eight surgeons, for he had many wounded—and he remarks that surgeons cut and cauterized for the benefit of their patients. He might have been a Moghul or Mahratta general—indeed, he showed more care for his army.

Two things seem to have been in favour of the Indian wounded: they were, for the most part, temperate, and they seem to have been less sensitive to pain than we are in these days. I have noticed the latter to be the case with many of the warlike races in India. Many native writers mention cases of great endurance. I quote one only: At Panipat, ever the site of great battles for empire, Hemu, the opponent of Akbar, had been shot in the eye by an arrow—in his howdah—and though in great agony, he drew the arrow with the eyeball out of its socket and wrapped it in his handkerchief, and continued to fight to encourage his troops *

The dangers to which the combatants were subject did not cease with those of the battle, nor were the duties of the surgeons confined to treating those who were wounded in fair fight. The victors and the peasants mutilated and plundered the fallen, and the prisoners were tortured or killed outright. Thus, Timur Shah or Tamerlane, in the fourteenth century, also at Panipat, ordered 100,000 of his prisoners to be put to death on the eve of the battle, because they were idolaters and had betrayed some signs of satisfaction at the sight of a skirmish, and he feared they might embarrass him. When Nadir Shah, in 1739, after his success, again at Panipat, took Delhi, he ordered three days' massacre of the population at Delhi, inflicting fearful tortures on men, women, and children alike.

Here, indeed, was work for the surgeons who had to treat those who survived such horrors. Some of the tortures showed considerable anatomical knowledge on the part of those who inflicted them, as in the case of impaling. A Mohammedan friend of mine told me that many of his ancestors had suffered in that way; but when I remarked that mercifully their sufferings were short, he said it was not so unless they were able to pay well. It appeared that the executioners could so apply the *suli*, or impaling pin, as either to kill at once or by graduated torture spread over several days. This explains the horribly fiendish act of Jehangir, who punished his rebel son Kushru by having him led through a double row of his followers who had been impaled, while persons who had been posted at short intervals cried out, "Behold your friends, your servants, do you homage!"

The horrors of a modern battlefield are as nothing compared to the sufferings and iniquities of those awful times, but the comparative humanity of the present day has been only gradually attained. Skinner describes his own terrible experience at the close of the eighteenth century. He was wounded at the battle of Uniara, and believes that only 50 out of 1,100 men escaped untouched. He fell about 3 in the afternoon, and did not regain his senses till sunrise next morning. When he came to himself he found that he had nothing on but his pantaloons. He crawled under a bush to shelter himself from the sun, and was found by two native officers of his battalion, one of whom had had his leg shot off below the knee, and the other had a spear wound through his body. They were dying of thirst, but not a soul was to be seen, and so they remained all day praying for death. So they continued all night. On all sides the wounded were crying for water, and the jackals were tearing the dead—and coming nearer to see if he and his neighbours were ready for them. They kept them off by throwing stones and making noises. The night was cold, adding to the horrors of their situation. Next morning a man and an old woman came out and relieved each of the wounded with a piece of coarse bread and a drink of water, and about 3 in the afternoon men arrived from the Chief of Uniara, who was on the side of the enemy, to bury the dead and take the survivors into camp, where the native doctors dressed Skinner's wounds and gave him a good dose of opium, which procured him a night's rest. He contrasts most favourably this humane treatment with that of the other native chiefs generally. It was altogether unusual, even a hundred years ago. What must have been the horrors of battles in earlier times? The dead were unburied, and so the land and the water were poisoned for years.

An interesting paper on The Ambulance in War: its Rise and Progress amongst Civilized Nations, was read at the Indian Medical Congress, 1894-5, by the late Surgeon-General Albert Gore, of the A.M.S., who showed that it was not until the early nineteenth century that organized methods of relieving the injured in the field, collecting them into hospitals, and nursing them when there, were established. He added that the world owes an incalculable debt for this conception and first organization of prompt aid to the wounded to Baron Percy, a leading surgeon in the armies of Napoleon. He it was who first had special men trained and designed to carry off the wounded instead of leaving them in the fighting line.

Many improvements were introduced by Sir James McGrigor in Lord Wellington's armies in the Peninsular war, especially in rapidly removing the sick and injured to the rear. Similar ideas soon prevailed in our armies in the East, where the necessity of quickly removing the wounded from the field was even more urgent than in Europe, for reasons which have already been indicated. The difficulties were immense, and still exist, as the establishment of men and animals required for this purpose is enormous, and very seriously hampers the conduct of a campaign. A distinguished surgeon once told me that a general, when urged to provide sufficiently for these demands, had said in his presence that if the doctors persisted it might be necessary to abandon the wounded, a decision which no one could tolerate under the conditions of Eastern warfare or climate.

The dooly, or palki borne by men, has always been the usual means in India for carrying off the sick and wounded, but it has been supplemented by camel panniers or khajawas, and vehicles of different kinds. As to the latter, I tried every kind used by men or women which was in the possession of the Maharajah of Jeypore, but few were comfortable. Even the ambulance carts of the Jeypore Transport Corps (perhaps, under Major Dhunpat Rai, C.I.E., the very best of the kind) are not easy to a tired, much less an injured, man when taken across country, though great care was taken to construct them to run in the ordinary cart tracks, a point not always attended to. In Moghul or Mahratta armies no provision of the kind was made. Every one who escaped, if not able to walk or ride off himself, had to be carried on an animal or in a country cart, and the friends alone—and not the State—could be depended upon to provide what was wanted.

The real difference between the old and new conditions in India is, that in the past there was no system; in the present the State has made itself responsible, though it must be assisted by individual effort. It was this which distinguished the armies of the Europeans in India from those of the native powers. The English and the French in the eighteenth century, in introducing disciplined troops instead of levies, first had the power and felt the need of providing for the sick and wounded. The military adventurers, whom the native princes employed to raise such disciplined forces, also generally adopted proper provision for the sick and wounded, and even for the first time introduced the system of pensioning the disabled. George Thomas, De Boigne, and others all followed the new plan, and in doing so gave their men confidence, and firmly attached them to themselves. Since those days there has been steady, though not always regular, progress, and, of course, the experiences of the Japanese and Boer wars have been the most recent and influential factors in development of the latest schemes.

The main principles of the present methods are to follow up the fighting line, so that the wounded may be succoured as soon as possible after they fall; their speedy and, as far as may be, comfortable removal to a place of comparative safety, and then to some place at which they can be properly treated, in view of returning them when fit at the earliest date to the front. When the casualties

* Even women were so courageous, and heedless of the pain of wounds, that we read of such an instance as the following in the *Seir Mutakherin*: "A noble Rajputni married a Mussulman of rank, and when he was called to war, took his dagger. Hearing of his death she cut open her own abdomen with it, removed her child, which she presented to the bystanders, and met her fate."

are few and not widely spread, relief can usually be quickly afforded by trained persons; but if a man falls at a distance from such skilled assistance, and the battle is a great one, it will be impossible to attend to all who fall even for some hours. In such cases, the only hope for the individual is that his comrades, or even he himself, may be able to afford what is so appropriately termed "first aid." Briefly, this is to stop haemorrhage, to apply first dressings to wounds, to put broken limbs into a position of safety, to relieve thirst, and to assuage pain by the use of sedatives, and then to arrange as soon as possible for removal from the danger zone.

My object in the present paper is to urge with special force the regulations which provide that every soldier should be taught so much. His own life and the lives of his comrades may depend upon his possessing such knowledge. If the "first aid" is properly understood and rendered, the experience of modern war, and especially of the Japanese war, shows the chances of recovery are enormously enhanced, and further that satisfactory "first-aid" treatment is usually sufficient to make a soldier safe until he can be transported to and reach base hospitals, even if they are at several days' distance. So important is this training that it should not merely be the standing order that every soldier should be afforded it. There should be no shirking it, and no desire to shirk it, for every man who has not acquired it is a danger to others, and a drag upon and a source of weakness to the army.

I have said nothing about the prevention and treatment of diseases peculiar to war. Nearly all now depends upon the soldier himself. If he is properly taught, and applies his knowledge, most of the disorders which are the scourge of armies—such as dysentery, enteric fever, and even cholera—disappear. The experiences of the Japanese and South African campaigns prove the truth of these statements up to the hilt. The successful preparation for and conduct of wars are now matters of science, and accident more rarely influences them; and those services in which both officers and men most clearly understand this will, other things being equal, inevitably be the victors.

DISCUSSION.

The PRESIDENT said that Colonel Hendley's comprehensive epitome of the methods of warfare as associated with medicine would, of course, be read by members of their profession with profound interest, although it might not lend itself to discussion in the ordinary way at that meeting.

Lieutenant-Colonel PORTER said one point mentioned by Colonel Hendley was the teaching of first aid to all soldiers. He did not quite agree with that, as soldiers taught in that way during peace might in time of war fall out to relieve a comrade, and thereby deplete the fighting line. That was a danger which should be kept in view. The R.A.M.C. was now well organized, and he thought in future casualties should be left in the hands of the field ambulances.

Lieutenant-Colonel E. M. WILSON said there might be a tendency to teach the rank and file of the army more than was absolutely necessary in first-aid and ambulance duties. It would be best to limit the training to application of the first field dressing which every soldier carried; that done, the soldier should return to his own duties in the fighting line. Otherwise not only would the strength of the fighting line be diminished, but the result would be that having taught the infantry or cavalry soldier so much the authorities might say there was the less need for the Army Medical Corps itself, which would be a great misfortune. He would rather urge an extension in the teaching of the first principles of sanitation to the rank and file of the army. That was work which might properly be done by each individual recruit, but was now performed by small squads of R.A.M.C. on mobilization. Two, three, or four men of the R.A.M.C. were told off to first aid in the field whose services would be more usefully employed in hospitals and ambulances. He advocated an extension in that direction rather than in educating the fighting soldier in anything beyond the rudiments of first aid and ambulance duties.

Colonel HENDLEY, in reply, said that he thought Colonel Porter, Colonel Wilson, and he had really only one end in view, that being to afford immediate and purely primary assistance in cases of emergency, such as haemorrhage, in the field. Men should only be taught how to act in such emergencies, and the most important point was therefore to impress upon them that their services were only intended to be strictly applied in cases of great emergency, and in no way to take the place of the medical service.

THE DIAGNOSIS OF SYPHILIS BY SOME LABORATORY METHODS.

By Fleet Surgeon P. W. BASSETT-SMITH, R.N.

FREQUENCY OF THE DISEASE.

THE deplorable amount of disease in the navy caused by chancroids and syphilis is only fully appreciated when we come to study the actual figures as given in the statistical returns; that this, too, is only a part of the whole must be remembered, as many of the late conditions which show themselves in affections of the nervous system and arterial degenerations are not included, the true syphilitic origin having not been appreciated, or scientifically demonstrated. With the improved methods of diagnosis now available, it will be possible to get a better estimate of these late lesions, particularly if we employ the serum diagnostic reaction advocated and elaborated by Wassermann and his followers. This is a consummation greatly to be desired, for without accurate diagnosis treatment must be uncertain. I have here summarized the available official returns of the last three years.

In 1906 there were 1,672 cases of chancroids, of which 13 were invalided, giving a ratio of 15.4 per 1,000 of the effective force.

Of primary syphilis there were 1,888 cases, of which 10 were invalided out of the service, with a ratio of 17.4 per 1,000.

Of secondary syphilis there were 3,153 cases, with 631 invalided and 4 deaths, with an average of 29.1 per 1,000 of effective force.

For 1907 we have—chancroids, 1,905 cases, or ratio of 17.5 per 1,000 of effective force; primary syphilis, 1,461 cases, or ratio of 13.4 per 1,000 of effective force; secondary syphilis, 3,215 cases, with 163 invalided out of the service, and 6 deaths, giving a ratio of 29.5 per 1,000 men.

For 1908 I am only able to give the numbers for Haslar Hospital, which are: Chancroids, 316 cases; primary syphilis, 26 cases, with 2 invalided; secondary syphilis, 783 cases, with 43 invalided, and 2 deaths.

The relatively small number of cases of primary syphilis is due to the fact that all patients entered for primary infection who show any signs of constitutional symptoms are now classed as syphilis ii. These statistics of cases cannot fail to impress us with the enormous amount of actual loss of strength to the navy from preventable diseases, when one considers that so often it is not only the loss of time, but that we have to deal with a disease which produces lasting degenerative effects on the man himself as well as on the race, either causing sterility, or often congenitally affected children of that class from which our fighting strength is likely to be drawn.

We are fully alive to the fact that recent years have made great strides in the methods of combating the actual disease by scientific and well-regulated administration of anti-syphilitic remedies; and that efforts, not yet sufficiently complete, are made to ensure that this treatment shall, in the case of each man, be fully carried out by means of special reports sent with the man showing how much he has received, so that a cure may be attained. That such is not always the case I know, some men receiving too much, some too little, the result being detrimental to the patient; with this important point, however, I do not propose to deal further, as it is outside the scope of this paper. With regard to the importance of an early diagnosis, I should like to refer more fully, for all agree that if a man is suffering from syphilis the sooner he is put under antisyphilitic treatment the greater the advantage to the man.

From observation of cases during the past year I have been impressed by the number of those who, being admitted for chancroids, presumably on fairly good clinical grounds, have developed secondary symptoms; some who have only had a urethral discharge have later given evidence of syphilis; also what a number of cases there

are where the nature of the sore is doubtful, and only time and treatment is able to clear up the case; and without definite signs most men hesitated, and rightly, to put the man on a mercurial course. Then how many cases one meets in the wards in which it is doubtful whether a skin eruption, an ulcer, etc., are secondary manifestations or not. How important is it, then, to have some scientific method of proving or disproving the syphilitic origin!

Dr. Mott has lately called attention to the point that, because a man has had syphilis, we must not infer too rapidly that that is the cause of his existing symptoms; the two diseases may be coincident, not dependent. It is by modern methods that we are able to find out whether or not the syphilitic virus is still present in the blood, and whether it is necessary to use antisyphilitic remedies.

Besides the diagnosis of syphilis in its relation to early treatment, we are often doubtful as to whether the patient is cured by the energetic methods employed or whether a continuation of them is required; this can be ascertained, I believe, by the serum reaction, for as long as any antibodies remain in the serum, so long should the treatment be continued. My experience has shown that sometimes when clinically a man may appear to have quite recovered, the reaction may continue strong, showing that the virus is still present and active. On the other hand, when after prolonged treatment no reaction can be obtained, the continued administration of mercury is likely to do harm rather than good, both physically and mentally, to the patient. We do not know, however, whether the cure thus obtained (by cure I mean total absence of clinical signs and serum reaction) is always of a permanent character, or whether under unfavourable conditions a "latent" infection may not again manifest itself in so-called parasyphilitic form.

METHODS OF SCIENTIFICALLY PROVING THE DIAGNOSIS.

Microscopic Method.

These may be (1) microscopical or (2) macroscopical. In the first we have the demonstration of the *Treponema pallidum*. That the presence of this form is positive evidence of true syphilis there is now little reason to doubt, from the abundant work that has been carried out both by direct examination and by animal experiment.

For the last year, at Haslar, I have made a very great many examinations to prove the presence or not of this organism, and, like others, have found the typical spiral body in the primary sores, buboes, condylomata, mucous patches, and roseolar spots. At one time it seemed to me that by gland puncture and appropriate staining of the film a ready method of diagnosis was possible. The procedure is so easy, the pain so slight, that it recommended itself as a good method. A very small glass syringe is used, and a little gland juice easily drawn out, taking care to move the needle a little in the gland to break up the tissue; this generally gets enough to fill the needle only, without drawing blood. I make three films, if possible, staining one by Leishman for half an hour, one by Giemsa for twelve hours over a watch-glass, and one by heated Giemsa as recommended by Preis,[1] who by his method states that he gets positive findings in 100 per cent. of cases—a "remarkable result."

The labour and eyestrain involved in such examination are very great, and with conscientious work, with full intent to succeed, I have failed to obtain anything like so favourable results. Very fine fibrous threads are common, but spirochaetes rare. Some cases with typical hard chancres and demonstrated spirochaetes, or with positive Wassermann, gave negative results. In all, I found spirochaetes in 38 per cent. of typical syphilitic cases, and never in chancroid infections.

This method does not appear to me to be of very great practical use, though if found, the presence of the spirochaete may be taken as positive proof of syphilis.

Macroscopic Method (Wassermann, Neisser, and Bruck's Complemental Fixation Method).

Although it is a little over two years since Wassermann suggested this method of diagnosing syphilis, there has already been a very large amount of research work done on these lines both at home and abroad, and very full papers lately have been published giving details of the results, proving its great value.

Since January last I have employed the test almos weekly, and the results are sufficiently numerous and interesting to be recorded. The method employed has been that recommended by Wassermann, slightly modified, using for antigen dried syphilitic congenital liver, kindly supplied to me by Fleet Surgeon Bankart, R.N.; from this an alcoholic extract was prepared, which keeps well.

The necessary factors required for each test are:

1. Syphilitic extract (or other antigen).
2. Serum of rabbit, which has been immunized by repeated intraperitoneal injections of washed sheep's blood corpuscles, and inactivated by heating for thirty-five minutes at 56° C. (amboceptor).
3. Fresh guinea-pig's blood to provide the necessary complement (alexine).
4. Inactivated serum of patient and serum of control.

The first three were standardized weekly, and if the specific blood and control reacted correctly the series of bloods to be tested were done.

My own blood was used as control in each series. In all cases the nature of the tested serums was unknown until the results had been read off, so that any unconscious bias was eliminated.

The test itself consists in mixing in a small test-tube correct proportions of saline solution, antigen extract, complement and patient's serum, deprived of complement by heating for half an hour at 56° C., incubating the whole at 37° C. for one hour, then adding the haemolytic rabbit's serum, and washed sheep's blood cells, and again incubating for an hour. If the syphilitic immune body is present in the serum the complement is taken up and no haemolysis occurs; if there is no specific immune body the complement remains free and is taken up by the amboceptor in the rabbit's serum and the sheep's blood cells are haemolyzed.

When satisfactorily performed the results are very definite and the reaction is easily read off. It is very important to standardize each factor weekly, and that in making the antigen dilution the alcoholic extract shall be mixed very slowly with the saline diluting fluid so as to give a turbid appearance.

The technique and quantities employed are further indicated in the tables on p. 379.

I have tested on these lines a series of 160 cases of disease, and an analysis of them shows that out of 66 cases of non-syphilitic diseases only 1 (a case of acute scarlet fever) gave a positive reaction—not a single case of soft sore in which secondary symptoms did not occur reacting. This is highly important, as they are the cases where there is generally most doubt.

In the series I have used the material in the hospital to test, as far as possible, a variety of other non-syphilitic diseases to eliminate any other condition which might possibly react and reduce the value of a positive finding, especially zymotic and skin diseases. It is interesting that during the acute stage of scarlet fever haemolysis was prevented, but in the same patient, when convalescent, it occurred normally.

Of the cases of true syphilis positive results were obtained in 83 per cent. in primary syphilis; in 96.5 per cent. in secondary syphilis; in 57 per cent. in tertiary syphilis; and in only 14 per cent. of cases with history, but without any symptoms; and, finally, in 60 per cent. of parasyphilitic cases.

An early diagnosis of syphilis was made in many cases of men admitted for chancroids in whom a double infection was present, as shown by the occurrence of secondary symptoms subsequently.

I should like now to refer to cases in detail in whom with syphilis a negative reaction was shown.

Primary Syphilis.—Three cases; two of these were admitted for chancroids. In one the examination was made two weeks after contracting the sore, before any induration had shown itself, and it was not until some weeks after that a secondary rash appeared. In the second it was two months after contracting the sore, which was typically soft and with a bubo; a secondary rash, however, came out three months after infection. The third case was that of a man with a chancre on the upper lip, date of infection probably three weeks, but the glands were considerably enlarged. He showed no trace of reaction; his blood was examined the next week, with still a negative reaction, although a secondary rash had come

	Saline Solution.	Complement.	Washed Blood Cells.	Haemolysis to test Complement.
	C.cm.	C.cm.	C.cm.	
1.	2	0.2	1	+
	2	0.1	1	−*
2.	2	0	1	−†

* The strongest dose which causes no haemolysis.
† To test saline solution.

	Saline Solution.	Complement.	Amboceptor (1-100).	Washed Blood Cells.	Haemolysis to test Rabbit Serum.
	C.cm.	C.cm.	C.cm.	C.cm.	
3.	1.2	0.1	0.7	1	+
	1.5	0.1	0.5	1	+
	1.6	0.1	0.3	1	+
	1.7	0.1	0.2	1	+*

* If complete haemolysis use 0·5 c.cm.

	Incubated for one hour at 37° C.				Incubate for one hour at 37° C., then stand in cold twelve hours.		
	Saline Solution.	Patient's Serum.	Complement.	Antigen.	Amboceptor (1-100).	Washed Blood Cells.	Haemolysis or Not.
	C.cm.						
4.	2.0	0.0	0.0	0.1	0.0	1.0	−*
	1.8	0.0	0.1	0.1	0.5	1.0	+
5.	1.8	0.2	0.1	0.0	0.0	1.0	−†
6.	1.7	0.1	0.1	0.1	0.5	1.0	−‡
	1.8	0.1	0.1	0.0	0.5	1.0	+
	1.6	0.2	0.1	0.1	0.5	1.0	−‡
	1.7	0.2 (control)	0.1	0.0	0.5	1.0	+
	1.7	0.1	0.1	0.1	0.5	1.0	+
	1.8	0.1	0.1	0.0	0.5	1.0	+

* To test antigen extract. † To test serum. ‡ Control test.

out in the interval. That he failed to produce any response to the infection by presence of immune body in his blood is remarkable, as at the same time another man with a somewhat older lip infection and secondary signs gave a strong positive reaction.

Secondary Cases.—Out of 57 cases tested, only 2 failed to give positive reactions. One of these contracted the disease in January, 1909, and developed secondary signs; he received ten mercurial intramuscular injections. When his blood was examined on April 1st he had a slight sore throat, but otherwise was well. The second case was that of the hard chancre of the lip, above referred to, after the secondary rash had come out; he is still under observation.

Tertiary Syphilis.—There were 7 cases, 3 of which showed no reaction. In the first of these infection dated eighteen years before. There was a chronic ulcer of the leg of serpiginous character. In the second case the man had a suspicious ulcer of the tongue, which cleared up under iodides; the primary infection was seven years before. In the last case the patient gave an indistinct history of syphilis ten years previously; he had motor aphasia and slight hemiplegia, probably specific.

History of Syphilis, but quite Well when Examined.—Of the 7 cases, only 1 gave a positive reaction. The 6 who did not were as follows:

1. Syphilis 6 years before ... 3 months' continuous treatment
2. ,, 3 ,, ,, ... 10 injections
3. ,, 1 year ,, ... regular treatment
4. ,, 1 ,, ,, ... ,, ,,
5. ,, 3 years ,, ... 9 months' regular treatment
6. ,, 7 ,, ,, ... 16 ,, ,, ,,

The majority of these cases were probably cured.

Parasyphilis.—There were 4 cases of locomotor; 2 gave no history of syphilis, 1 had probably secondary symptoms three years previously, and one sixteen years before. Reaction was given in 2 out of the 4. One case of general paralysis was tested; his blood gave a strong positive reaction.

OBJECTS KEPT IN VIEW.

The chief points that I endeavoured to ascertain were, (1) how early is the reaction present? (2) does mercurial treatment prevent the reaction? (3) is it present in other diseases?

With regard to the *first* question, 3 cases showed the reaction fifteen or sixteen days after the *date of infection*, and four within three weeks. In one case the sore was contracted on February 10th, and the reaction was obtained on February 25th—fifteen days; a second on February 17th, and reaction on March 4th—sixteen days; a third in fifteen days, the hard sore just developing. Thus the reaction is obtained very early, and gives certain evidence of the nature of the disease. In 6 cases it was obtained later than five years after infection, one being after a period of ten years.

With regard to whether mercury prevents the appearance of the reaction, the following case is of interest: The man contracted the disease in January, 1909; he developed a sore-throat, but had no rash; he received ten injections, and then the blood was taken and gave a negative reaction. Was the man cured or was the reaction inhibited? I think the former, for he has remained free since; and in two other cases with early secondary signs after eleven and twelve injections, the blood still gave a strong reaction, and in one in a later condition of eighteen months' duration, after twenty-five injections. It will be seen that in most of the cases which showed no signs of present disease, but gave distinct histories of syphilis, regular treatment had been carried out, pointing to the likelihood that a cure had been obtained, but fuller observations on this point are required. It would also seem from these observations that the later the period after infection, the more variable are the results owing to a gradual disappearance of the immune body in the blood, brought about by lessened activity of the infecting organism.

In reply to the *third* question, whether the reaction is present in other diseases, we have seen that the reaction is practically a specific one for syphilis as regards conditions that are likely to be mistaken for that disease, and is therefore of the utmost value as a diagnostic method.

Since Wassermann elaborated his technique a great many modifications have been brought forward with the purpose of simplifying the process, the most important being that lately described by Fleming,[2] who has improved Hecht's process, using only a prepared extract of heart muscle, washed sheep's blood cells, and human serums, utilizing the fact that human serums have a haemolytic action on sheep's blood cells containing the necessary complement and amboceptor. If, therefore, the serum when mixed with the sheep's washed red cells in proper proportions produces complete haemolysis, then on replacing the saline solution by the antigen extract solution the complement present is taken up or deviated by the extract in combination with the immune body in a syphilitic serum, and no haemolysis occurs.

The technique given is beautifully simple, requires but little blood, and an extract which keeps well of such strength that it shall fix the immune body in the syphilitic blood but shall not absorb the complement and prevent haemolysis in normal blood. It, however, has the drawback that in 10 per cent. of cases (according to Fleming) normal blood does not haemolyze sheep cells, and either complement or amboceptor has to be added, and that, I think, owing to the small quantities used, indefinite reactions are frequent; also a percentage of normal serums cause a certain amount of autohaemolysis, which tints the serum and masks the reaction.

I have tested 154 samples of blood, giving me, not 10 per cent., but 30 per cent., of serums which normally fail to haemolyze sheep cells completely—a very serious drawback—and have also controlled a number of tests by the ordinary Wassermann's method with the following results:

154 samples of blood were tested: 108 caused complete haemolysis of sheep's blood cells; 46 caused incomplete or no haemolysis.

47 samples of blood were tested with the correctly standardized extract, controlled by the Wassermann test, which agreed with the clinical diagnosis in each case:—

Non-syphilitic blood (25):	
No reaction	20
Incomplete reaction	4
Complete reaction	1
Syphilitic bloods (22):	
Complete reaction	10
Incomplete reaction	8
No reaction	4

From these observations, which are, however, too few to dogmatize on, I believe that the method, though useful, is far less reliable than the more elaborate original technique, in which each factor is standardized before use. Dr. Mott[3] states that "the original method of Wassermann is the most complicated, but is regarded by the majority of investigators as the *most specific* and *reliable*." McIntosh says that "most of the modifications for simplifying the technique have little to recommend them, and at present it does not seem likely that any modification which could be done outside a well equipped laboratory could have any practical value."

CONCLUSIONS.

The general conclusions reached by me are:

1. That almost all cases with evident primary syphilis give a marked reaction, this being obtained as early as the fourteenth day after infection in some cases.
2. That in many cases admitted for chancroids the presence of a double infection was early indicated by the test.
3. That in almost all cases of early secondary syphilis, with or without symptoms at the time, positive results were obtained.
4. That in late secondary stages or tertiary manifestations the results are more variable.
5. That in about 50 per cent. of parasyphilitic cases a positive reaction is present.
6. That in cases without symptoms and generally after much treatment, but with an undoubted history, a minority roacted.
7. That the reaction is specific for syphilis as far as other venereal diseases are concerned.
8. That mercurial treatment did not appear to prevent the reaction when symptoms were present.
9. That by this method we have a valuable aid in the diagnosis of syphilis, deciding the nature of many difficult cases, and early indicating the need of specific treatment.

REFERENCES.

[1] *Pester Med.-Chir. Presse*, November, 1908. [2] BRITISH MEDICAL JOURNAL, May 22nd, 1909. [3] Ibid., February 10th, 1909.

THE ARYLARSONATE TREATMENT OF SYPHILIS:

ITS PROBABLE FUTURE EFFECTS IN THE SERVICES.

By F. J. LAMBKIN, Colonel R.A.M.C.

IN discussing the question of the treatment of syphilis by means of arylarsonates, it is no intention of mine to compare it with that by mercury. The position of the latter is perhaps stronger now than it has ever been, for, after having gone through various vicissitudes in the ups and downs of heated discussions, it has, especially during late years, been generally accepted as *the* specific for syphilis. Nevertheless, there were and are cases which resist mercury in any form, cases to which mercury cannot be given owing to their extreme susceptibility to it, and for such the necessity of finding a substitute was all-important.

At our last annual meeting at Sheffield I had the honour to read a paper on the treatment of syphilis by arylarsonate salts, recording up to that date 54 cases so dealt with and with favourable results. It is my intention now to bring further evidence to prove the utility of these salts in the treatment of the disease.

Since August, 1907, when I first began to use these arsenical compounds, my colleagues and myself have treated over 130 cases with them. In these cases syphilis was represented in all forms and stages—from the typical Hunterian chancre, accompanied by enlargement and hardening of the inguinal and cervical glands, to cases showing the different forms of syphilitic rashes, as also others in the later stages with various forms of syphilitic lesions, including signs of commencing tabes. Most of these did remarkably well. In the cases of Hunterian chancre this soon softened and passed away, the majority showing no signs of return, and in many there were no further developments of the disease. Syphilitic rashes rapidly disappeared, ulcers of the mouth and throat healed, whilst the gain of body weight was most marked from the beginning; at the same time, anaemia and cachexia cleared away.

The most interesting effects of the treatment were seen in cases in the later stages of the disease, of which the following are a few:

CASE I.

A. C., aged 45. Disease contracted twenty-four years ago, when he had a chancre followed by a roseolar rash and sore throat, and later on a profuse papular pustular eruption broke out over the body. Received what appears to have been a very complete mercurial treatment by the internal method, and chiefly by means of hydrarg. c. creta. He has spent many years in the tropics. Says that he is obliged to take the specific almost continuously, otherwise the disease is certain to break out in one form or the other; this has been the case for years past. When I saw the patient he was much debilitated and anaemic, suffered from periodic nocturnal headache and was subject to a peculiar swelling and redness on the side of the nose, especially when he omitted to take mercury for any little time. On January 14th, 1909, I commenced treatment, giving 8 grains of arsacetin on that day. Continued to give same dose every second day until 100 grains had been reached. Under this the patient made rapid improvement, cachexia and anaemia disappearing, body weight increasing markedly, all swelling and acne-looking rash on nose vanished, appetite improved much. No further signs of the disease. Further course of arsacetin begun March 1st. Patient had to go abroad then. Up to date has had no return of the disease.

CASE II.

K. H., aged 54. Good physique. Contracted disease (syphilis) thirty years ago. Denies ever having had a sore, but had a rash which was of a papular pustular nature. Was treated at Aachen, where he went through usual course. Since then has had frequent returns of the disease and much internal treatment. Two years ago the tongue began to get sore and spots to appear on the body. Went under further treatment in London, and has been taking medicine (hydrarg. c. creta) almost continually ever since, the symptoms clearing up and breaking out afresh from time to time. Condition when I saw him: Much pulled down in every way as regards general health; tongue deeply ulcerated on sides and dorsum and marked with leucoplasia, as were the inside of the cheeks. Profuse leucoderma on body.

Course of arsacetin begun on September 21st, 1908, and continued until 100 grains were administered. Under this treatment patient did extraordinarily well, all symptoms disappeared, and general health rapidly improved. No local treatment of any kind was applied to the tongue. Has had one course since then, but up to date there has been no further developments of disease.

CASE III.

E. K., aged 45. Contracted a hard sore twelve years ago, which was followed by glandular enlargements and a papular rash. Went under treatment in London and took hydrarg. c. creta almost continuously for two years. Since then has had many fresh outbreaks of the disease, which he has combated by resorting to same treatment. Condition when seen by me: Cachectic and anaemic; papular rash on forehead and nose; suffered much from neuralgic pains in legs; reflexes normal.

Course of arsacetin begun January 16th, 1909, and continued until a total of 100 grains had been given. Patient rapidly improved in health and all rash disappeared. Gained 8 lb. in a fortnight. Went abroad, and when last heard of had had no further symptoms.

CASE IV.

E. T., aged 34. Contracted syphilis in India eight years ago, having a chancre on penis, followed by a roseolar rash and sore throat. Went under specific treatment at once (hydrarg. c. creta). This he continued for one year in India and eighteen months at home. Went through a course of inunction at Wiesbaden; symptoms disappeared, but patient returned home much pulled down in health, and shortly after further symptoms of disease recurred; the latter consisted mostly of mucous patches and ulcers in mouth and tongue, with rupial-looking sores on legs. Came under medical advice in London as to the question of being allowed to marry. November, 1907, three months after the appearance of last symptoms, a nerve specialist examined his cerebro-spinal fluid, and both he and the usual medical attendant agreed that the patient was quite free from syphilis and could safely marry. This he did in January, 1908, and six months later rupial ulcers appeared on his face and legs. Consulted a medical officer, R.A.M.C., who sent patient to me. Saw him October 22nd, 1908. He was cachectic and much run down in health and had a partly-healed ulcer on face, whilst there were two undoubted rupial ulcers on calf of right leg. Went through course of arsacetin, and all above symptoms cleared. Course repeated in six weeks' time, and he has had no further return of disease.

CASE V.

Aged 55. Contracted syphilis twenty-five years ago; suffered from a hard sore, followed by rash on body. Went under treatment (hydrarg. c. creta) at once, until all signs disappeared, when it was discontinued. A little later suffered much from palmar psoriasis, which eventually cleared under hydrarg. c. creta. Since then has had very many fresh outbreaks of the disease, consisting mostly of sore throats with mucous patches on the tongue. Took much mercury internally. Spent many years in India. Condition: On lower lip there is a small ulcer which is scabbed over; this he says has been present for more than ten years, and has been suspected for epithelioma more than once, but was eventually pronounced to be syphilitic. It sometimes almost disappears, but always recurs sooner or later. At angles of mouth are cracks and fissures and there is the undoubted snail tract of syphilis on dorsum of tongue (leucoplasia). The latter has been most persistent for last eight years. Began course of scamin, September 8th, 1908, and completed course of 100 grains. After the seventh injection had an attack of colic with nausea and vomiting. Injections omitted for three days, when they were resumed and course completed without any further untoward signs. The lesions in this case cleared up in a wonderful manner, more especially considering their chronic and persistent nature. Three months later patient had a further course of arsacetin, and up to date has had no further recurrence of disease.

The above are a few of the most interesting cases treated by the arylarsonate salts. The former are peculiarly interesting from the fact that hitherto their utility was doubted as regards syphilis in its later stages. In forming an estimate as to how far these compounds are capable of preventing further ravages of syphilis it would be necessary to watch the progress of a number of cases which had been treated solely by them, which is a matter of very great difficulty even in the army or navy, where men are continually being lost sight of owing to taking their discharge or to being transferred elsewhere. Among the cases treated I only saw slight toxic symptoms in two, and this was in two patients both over 55 years of age. The symptoms consisted in one of slight colic with nausea and vomiting, in the other of browache and dizziness. All the other patients underwent full courses without interruption.

Preparations used.—The preparations of arylarsonates which were used were as follows:

1. Atoxyl (arsonate of sodium).
2. Soamin (amino-phenyl-arsonate).
3. Arsacetin (acetylized arsenilate of sodium). } Professor
4. Arseno-phenyl-glycin (*in vacuo*). Not yet tried. } Ehrlich.

The first of these—that is, atoxyl—was the original compound of arsenic which was used for sleeping sickness and later for syphilis. With it I treated some 24 cases of the latter and with much success; no untoward symptoms occurred, nevertheless I was obliged to abandon it owing to the ill reports which came in concerning its dangers, as also after having seen 4 cases of total blindness which followed its use for sleeping sickness in Uganda.

The second preparation, that is, soamin, was introduced by Messrs. Burroughs Wellcome of London; it is a sodium amino-phenyl-arsonate, and almost identical with the old preparation atoxyl, except that, being of a definite chemical composition and arsenical strength (which atoxyl is not), it can be administered with much greater safety and confidence than a compound liable to variation in strength, as is the case with atoxyl; in other words, it is a staple preparation. Soamin has been employed very extensively at the Military Hospital, Rochester Row, and with very great success, and with the exception of the two cases above mentioned, none of them have been followed by toxic signs.

The salt is made up in solution for use, and is given either subcutaneously or intramuscularly. On account of its tendency to decomposition when kept for any time before use the solution needs to be made up afresh at least daily before use. The dose which I have been giving is 10 grains every second day until a total of 100 grains has been attained.

The third preparation which I have utilized, that is, "arsacetin," was introduced by Ehrlich as an improvement on the original atoxyl. He describes it as the acetyl derivative from the latter, and for short called it arsacetin. Of it Neisser remarks:

1. Arsacetin is certainly far less toxic than the old atoxyl, both healthy and diseased animals tolerating much larger doses of it than of the latter.

2. Its remedial action in syphilis is at least equal to the older preparation.

3. No decomposition of any kind in the solutions, even when stored for a long time, can be detected; even boiling daily does not alter the solutions in any way.

This preparation I use in 10 and 15 per cent. solutions. The latter has the advantage of not requiring so large a quantity of fluid for injection, consequently causing less pain than the weaker solution; on the other hand, it has the disadvantage that it deposits the salt when cold and requires to be reheated before being used, so as to bring the latter into solution again.

As regards the dosage of arsacetin, I have been giving 40 minims of the 15 per cent. solution, which represents 8 grains, at each injection every alternate day, until 100 grains have been totalled. Whether it is better to give injections on two consecutive days, or whether more favourable results would be obtained if they were given less often but in larger doses, has yet to be decided, but, judging from the analogy of experience in trypanosome disease, one is inclined to favour the former.

During the last year I have used the drug very extensively, both in hospital and private practice, and not one case has shown any toxic symptom. I find that in the majority of patients it promptly removes symptoms, and the general condition is much improved, whilst in others it fails, and recurrences take place during and immediately after a course of it; on the other hand, it very often succeeds where mercury fails. Its beneficial effects were most apparent in the older cases (late stages), some of which responded to it in a wonderful manner.

THE THREE DRUGS COMPARED.

The great disadvantage of atoxyl is that it is not staple as regards strength, and its solutions are liable to decompose, thereby forming dangerous by-products; and it cannot be denied that if the risk of optic atrophy has always to be run, even after a moderate dose, one would hesitate before employing atoxyl.

Soamin is far preferable to atoxyl, although it is practically the same salt, the fact being that it is of staple strength, and consequently its toxic effects are very limited, always provided that certain points, such as using only freshly prepared solutions, are adhered to, and always remembering their liability to decompose on being stored for any time, and that they cannot be sterilized owing to chemical changes taking place on this being done.

Arsacetin, besides being less toxic than either atoxyl or soamin, has the great advantage that solutions of it do not decompose on being stored or boiled, hence it is practically free from the dangers of the latter salts.

Of the newest preparation—that is, arseno-phenyl-glycin—sufficient time has not elapsed to allow of anything like a definite opinion being given; at the same time, the fact of its requiring to be supplied *in vacuo* and the danger attached to it on its exposure to air, appears to me to put it out of count for anything like general use, more especially as the little glass tubes in which it is supplied are very apt to get cracked in transit, thus exposing the salt to the air.

For the present, I think that the advantages are decidedly on the side of arsacetin. As already stated, it has been used a great deal by myself, and with no untoward effects. As a rule, I have employed it alone, whilst in other cases I have made use of it in combination with mercury, giving both simultaneously with very good results. With more extended experience, the advantage of employing mercury and arylarsonates together in certain cases of syphilis is becoming daily more impressed on me. One thing is certain—that is, that many cases of syphilis which respond readily to one of these agents may be totally unaffected by the other, and vice versa, and this without any reference to their susceptibility to either, which leads me to the conviction that there are different strains of *Spirochaeta pallida*, which are affected differently by mercury and arsenic. The presence at the same time of these different strains in the same individual may explain the good which follows the employment simultaneously of mercury and an arylarsonate. On the other hand, there might be an advantage in giving these latter alternately. Perhaps there might be an advantage if arsacetin and mercury were employed alternately.

INDICATIONS AND USE.

For the present it is at least advisable to proceed cautiously with the employment of arylarsonates, especially in those cases where any parenchymatous organic changes are observable, as it appears that already diseased or enfeebled organs are more susceptible to their toxic action, hence cases showing signs of cardiac or renal organic disease should not be submitted to treatment by these salts.

The question as to how to proceed with the arylarsonate treatment—that is, as to when a second or third course should be commenced—has naturally been the subject of much thought, as it could only be decided by careful observation and clinical experience. The plan in vogue at present at Rochester Row is to repeat the course in three months' time in all cases after the cessation of the first (earlier in cases showing a recurrence of symptoms), and a third course is given in six months' time in all cases whether showing signs of the disease or not.

With regard to prophylaxis: At the meeting of the International Medical Congress at Berlin, 1907, Metchnikoff made the statement that by injection of atoxyl he had succeeded in preventing further developments of syphilis in cases of undoubted syphilitic chancre, and strongly advocated it as a prophylactic, the number of injections which he succeeded with was three of 10 grains each. His statement was very thoroughly tested in our army—that is, at certain of the largest military stations every second case of venereal sore, of whatever description, which was admitted into hospital received four injections of 10 grains of either atoxyl or soamin, and a careful record kept. The experiment showed that the injections did not prevent further developments of the disease in any way, so that from a prophylactic point of view I fear little importance can be attached to the remedy.

In considering the question as to the value of these arsenical compounds, either from a preventive or curative point of view, I would remark that to judge the efficacy of a syphilitic remedy from its symptomatic relieving action is wholly false, considering the proof which has been furnished by experiments on animals that these salts possess a reliable curative virus-destroying action. It is, therefore, our duty to utilize this experience gained with animals in the treatment of syphilis, although in the human subject we may at present not be able to produce proof that these arsenical salts are capable of eradicating the disease, and can but observe their influence on the symptoms; still, there being no justification for doubting this power, we ought to make the most of this possibility. There is no necessity to confine ourselves exclusively to the use of mercury or these arylarsonates, as both will be equally useful in certain cases, either alone or when employed simultaneously.

THE FUTURE OF ARYLARSONATES.

What effect the introduction of these salts in the treatment of syphilis will have in the services it is impossible to foretell, but that they are destined to supersede mercury is most unlikely; on the contrary, I believe that their introduction will strengthen more than ever the position of the latter, as by its combination with arylarsonates it will be feasible now to deal successfully with those cases which had hitherto for some reason or another resisted it when administered alone.

There is a class of case to which these arsenical compounds ought to be a veritable boon—that is, those to which it is impossible to give mercury in any form, owing in some cases to an idiosyncrasy, in others to the patient being debilitated and broken down from climate or other tropical influences, and especially to those cases of syphilis which are deeply tainted with malaria.

On the whole, I believe that the introduction of these arylarsonates in the treatment of syphilis will have an important influence in the services, as they will undoubtedly tend to lessen the admission rate, as also that for invaliding.

Our present knowledge of the power of these salts of arsenic over syphilis is only in a very elementary stage; but I look forward to further experience of them and improved technique leading us, with the help of mercury, to that goal in the treatment of syphilis which has already been attained in that of dourine.

ARSENICAL COMPOUNDS IN THE TREATMENT OF SYPHILIS.

By H. C. FRENCH, Major, R.A.M.C.

THE arylarsonates may be divided into three principal salts—namely, atoxyl, soamin, and arsacetin (orsudan)—used in the form of intramuscular injection.

Atoxyl (sodium amylarsenate), owing to its toxic qualities and the risk of causing blindness from optic nerve atrophy, is not now so much *en evidence*. It has given way to purer preparations, and has been given up in Germany.

Soamin (sodium para-aminophenylarsenate) has received an extended trial in the British army recently. The method employed has been ten injections of 10 grains of soamin every second day until 100 grains have been injected. Whilst admitting that, in many instances, it produces a gain of weight of 5 to 7 lb., owing to its tonic action in cases of primary and early secondary syphilis treated as in-patients on full dietary in hospital, yet the gain of weight is no greater than occurs under mercury judiciously used. The action of soamin on the induration of the chancre and the lymphatic glands within the first four to six months of contracting syphilis is not nearly so marked as that of certain mercurial preparations. Further, the results with soamin are of a "temporary" nature, relapses of rash and ulcers in the mouth being frequent and often severe. Mercury or other measures (local and general) have finally to be used to remove the external symptoms.[1] Soamin rapidly decomposes in solution, and is difficult to inject, except when the solution is very hot.

For this reason I pursued a series of investigations with the much more soluble salt—arsacetin (acetyl-amylarsenate)—the method employed being the same as with soamin—namely, ten injections of 10 grains each every second day, on the lines recommended by Heymann.[2] The gain in weight under arsacetin (orsudan) amongst patients treated in hospital in the early phases of disease was fairly constant—namely 5 to 10 lb. from the first to the tenth injection—but not more weight was gained than occurs under the judicious use of mercury. The effect of arsacetin on the induration of the chancre and on the lymphatic glands was commonly negative. A white line commonly occurred on the gums.

The skin lesions in some cases treated by arsacetin rapidly disappeared (but this, as is generally recognized, may occur without treatment). In other instances, in the case of more severe papular rashes, there was no change. Local applications were necessary to effect the resolution of lesions about the mouth and throat. Anaemia became less, and the patients stated they felt better. Relapse in the case of arsacetin was usual and of a grave character.

Blood counts, both red and white, and an estimation of the haemoglobin, were independently made in the pathological laboratory before beginning or on concluding a course of arsacetin. Haemoglobin and the red cells were usually increased.

I am of opinion that arsacetin used on patients in hospital exerts a tonic effect on the general condition, as does quinine, iron, phosphorus, cod-liver oil, sanatogen, diaphoresis, and hydro-therapeutics, but that it should not, in view of Heymann's opinion[3] as to its purely "temporary" action, entirely replace mercury in treating early syphilis. It should, I think, be used either in conjunction with mercury, as is now, I believe, the practice in Dr. Feibes's clinic at Aix-la-Chapelle, or possibly be used later, in the interval after the first thorough course of mercurial inunctions and baths.

I have found the combination of mercury with arsenic in the form of Donovan's solution, *B.P.* (liquor arsenii et hydrargyri iodidi), of considerable value in certain cases with late secondary or early tertiary manifestations. The well-known therapeutic action of arsenic, however, in treating some skin diseases is fully recognized, but the temporary removal of skin lesions in syphilis is not necessarily cure, since Nature, in many instances, can as rapidly effect this result without any drug. The test of benefit in early syphilis is the rapid reduction of induration in the chancre and in the lymphatic glands. I have not found

soamin or arsacetin nearly so valuable for this purpose as mercurial inunctions with baths.

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ON THE BENEFICIAL RESULTS OF RECENT SANITARY WORK IN MALTA.

By G. S. CRAWFORD, Major, R.A.M.C.

A FEW years ago most service people looked upon Malta as a very undesirable station, and the chief reason for this opinion was the amount of sickness usually prevalent in the garrison. All this has been changed, and Malta is now known to be one of the healthiest of our foreign stations. A few notes on how this has been brought about will no doubt be interesting to this Section. There is another reason for bringing this matter before you, and it is this: If we can prove that by sanitary measures we are able to greatly reduce the number of sick, we shall then secure the active co-operation of all ranks in the army. In Malta we have proved this beyond any shadow of doubt.

There are many advantages in keeping the army healthy. It gives the regimental officers a much better chance of efficiently training their men and fitting them for active service. It is a great saving to the State.

The cost of having many sick in hospital and of invaliding is very great, and a man's service is lost to the State while he is on the sick list.

It improves the *morale* of the army. Nothing depresses men more than to see their comrades ill in hospital, especially when they think that the illness is due to an unhealthy climate.

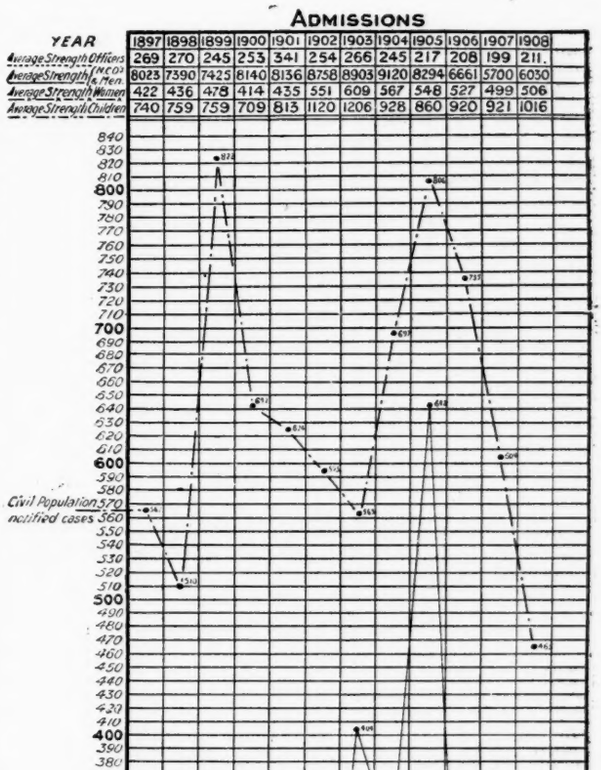
It helps recruiting. Nothing tends more to deter men from joining the army than the sight of many invalided soldiers.

Malta Fever.

Until quite recently Malta fever was the chief cause of sickness and invaliding both in the army and navy stationed at Malta. In 1887 the specific micro-organism, the *Micrococcus melitensis*, was discovered by Colonel Sir David Bruce, F.R.S. This discovery separated Malta fever from all the other continued diseases, and in 1896 it was included for the first time in the *Nomenclature of Diseases* as a distinct disease.

Owing to the prevalence of Malta fever a Commission was appointed by the Admiralty, War Office, and Malta Civil Government to investigate its cause. This Commission discovered that the goats of the island suffer from Malta fever, and when so infected secrete the germs of the disease in their milk, and such milk, if drunk unboiled, conveys the disease. The importance of these discoveries will become apparent when one considers that the goats supply practically all the fresh milk in the island. The Commission further discovered that cows kept for any length of time in the island also contract the disease and secrete the germs in their milk, so that the importation of cows to supply fresh milk for the garrison and fleet would be useless. The boiling of the local milk was tried, but experience proved that cooks could not be relied upon to do it. This was proved frequently by applying the "Ortol" test to milk which was stated to have been boiled. It was therefore decided to prohibit the use of all local fresh milk and its products—butter, cheese, and cream—in barracks, hospitals, and ships, and to import preserved milk, butter, and cheese.

These preventive measures were adopted in June, 1906, and the results have been most remarkable; a glance at the accompanying chart* will show that since that date Malta fever has practically disappeared from both services. The majority of the 161 cases which occurred in 1906 were contracted before the use of local fresh milk was stopped. All the 11 cases which occurred in 1907 were traced to the use of unboiled goat's milk; in 4 out of the 5 cases which occurred in 1908 there was a clear history of having drunk unboiled milk, and in the other case there was good reason to believe that local cheese had been often used. These facts prove that the disease is disseminated by the goats and cows of the island. There is still further proof of the correctness of this theory to be found, if further proof were required, in the fact that amongst the civil population who still use goat's milk the disease is prevalent. That it is not so bad as it was is due to the fact that an increasing number take the precaution to boil the milk.



MALTA FEVER *in the* MALTA GARRISON *from* 1897 *to* 1908.

Enteric Fever.

The decrease in the number of cases of enteric fever in recent years is as remarkable as it is satisfactory. The numbers fell markedly in 1906, and this coincided with the introduction of the system of giving lectures on sanitation to all officers, non-commissioned officers, and men by the medical officers in charge of troops. In 1907 there

* The author supplemented by use of graphs his account of the history of each class of disease; a specimen is here reproduced.

were 14 cases in the command, and bacteriological examinations showed that 12 of these were due to infection by an organism of the paratyphoid group. In the investigation into the cause of these cases it was found that in the country districts of Malta vegetables are very often watered with liquid sewage from cesspits; such vegetables are often bought by soldiers, and when they are eaten raw, as is the case with lettuce, radishes, watercress, etc., are a likely cause of paratyphoid, especially when they are not carefully washed. It was found that, as a matter of fact, soldiers very often bought such vegetables from hawkers, and, after only slightly rinsing them under a tap, ate them. This led to the publication of an order drawing attention to the danger of this practice, and directing that vegetables eaten uncooked should be first thoroughly washed in water and then rinsed in a weak solution of vinegar. The reduction in the number of cases following the publication of this order is interesting and suggestive. In 1908 there were only 5 cases of enteric fever, and only 2 of these were due to infection by an organism of the paratyphoid group.

There are still a considerable number of dry-earth latrines in use in the Malta garrison and such latrines favour the spread of enteric fever. These latrines are being slowly replaced by latrines on the water-carriage system. When the dry-earth latrines are completely done away with, the control of outbreaks of enteric fever will be very much easier.

Tuberculous Disease.

The following tables, given on pages 305 and 306 of the Army Medical Report for 1907, showing the admissions under this heading for the ten years 1897-1906 and for the year 1907, are interesting.

Rates per 1,000 of Strength.

1897-1905.		1907.	
India	3.4	Ceylon	9.7
United Kingdom	3.1	Crete	5.3
South China	2.9	Mauritius	4.9
Malta, Gibraltar, Egypt, Straits Settlements	2.8	South China	4.8
		Gibraltar	3.5
		Straits Settlements	3.1
Bermuda	2.5	Bermuda	2.5
Ceylon	2.3	United Kingdom	2.4
North China (1903-1906)	2.0	Malta	2.4
South Africa (1902-1906)	1.9	India	1.7
Mauritius	1.4	Egypt	1.7
Crete	1.2	South Africa	1.4
Cyprus	0.9	Cyprus	0
West Africa	0.7	West Africa	0
Jamaica (no information available).		North China	0

It will be seen that the percentage of admissions in Malta has decreased and that the position of Malta, as compared with other stations, has considerably improved. This improvement coincided with the erection of modern barracks and the increase of space allowed to each man in the older barracks.

At present practically all the cases of tuberculous disease come from the old casemate barracks. Improved ventilation of such of these barracks as must be retained would, no doubt, lessen the amount of tuberculous disease still further. Still better would be the provision of modern barracks. Tuberculous disease is not readily contracted in Malta by those living under healthy conditions. From the middle of March to the middle of June the climate of Malta is ideal, but during the remainder of the year it is, in my opinion, unsuitable for people suffering from tuberculous disease, owing to the hot depressing sirocco winds, combined with dust storms in the summer, and the frequent variations of temperature which are so common in the winter.

It is a pity that more people who wish to escape the severe spring weather at home do not come to Malta. There are many attractions, such as a good climate, plenty of amusements, interesting historical buildings, etc., and the cost of living is not nearly as great as in most other health resorts.

Pyrexia of Uncertain Origin.

There were 299 admissions under this heading during 1908. This number, although high, is low compared with previous years. The blood of every case of pyrexia is carefully examined, so that the possibility of including mild cases of enteric fever, paratyphoid, or Malta fever, is guarded against. These cases occur in the summer months when "sand-flies" and mosquitos are most troublesome, and this leads me to suspect that the disease is most likely spread by these insects.

A disease very much like pyrexia of uncertain origin met with in Malta has been investigated in Herzegovina, and has been proved to be spread by means of the *Phlebotomus papatasii*. I had specimens of the so-called sand-fly of Malta collected and submitted to Professor Newstead of the Liverpool School of Tropical Medicine, who stated: "They do not belong to the Simulidae. They belong to the Psychodidae, genus Phlebotomus." Is the illness met with in Malta the same as that met with in Herzegovina and spread by the same agency? The question is being investigated by Lieutenant-Colonel C. Birt, R.A.M.C.

Dysentery.

Cases of dysentery occur in all tropical and subtropical climates where the general hygienic conditions are bad, and Malta is no exception to this rule. But by attention to sanitary details and by having secured a pure water supply dysentery has been banished from the garrison and all the large towns. It is still to be met with in the village and country districts, where the water is obtained from shallow wells, and where the sanitary conditions are still unsatisfactory. Of late years practically all the cases which have occurred amongst the troops have been relapses, as in nearly every case the disease had been previously contracted in India or in some other foreign station. The decrease in the number of admissions for dysentery is most satisfactory and encouraging, as it shows how much can be done in the way of preserving the health of soldiers by attention to the ordinary rules of disease prevention.

Rheumatism.

The number of admissions under this heading has been steadily decreasing for several years. The first improvement was due to the erection of modern barracks, but the still greater improvement in the last three years is accounted for by the practical disappearance of Malta fever. One of the sequelae of Malta fever most frequently met with is pains in the muscles and joints very like rheumatism, and there is no doubt that in a number of very mild cases of Malta fever which did not necessitate admission to hospital these pains were shown as rheumatism.

Ophthalmia.

Perhaps the best example of the good results which follow attention to sanitary details is furnished under this heading. In the Sixties ophthalmia was one of the greatest scourges in the Malta garrison. Take 1861, for instance. The strength was 6,185, and the number of admissions under this heading was 598. In 1907 the strength was 5,700 and the number of admissions was 15; in 1908 the strength was 6,030 and the number of admissions was 18. This improved state of affairs is due to the improved ablution arrangements.

Infantile Enteritis.

The great cause of infantile mortality in Malta is enteritis. In 1905 there were 60 admissions and 13 deaths in the garrison from this disease. The highest admission-rate was at Imtarfa, which gave 20 admissions and 5 deaths. In 1906 the following steps were taken at Imtarfa to combat the disease:

1. The insistence of a high standard of cleanliness of quarters and their surroundings. The quarters were carefully inspected once a week, particular attention being paid to the condition of the waterclosets. Latrine brushes were put in every quarter, and their daily use recommended. Closet pans which were found to be coated with faecal matter were thoroughly cleansed with a weak solution of hydrochloric acid, and the seats were ordered to be kept up when the closet was not in use. All the gully traps in the vicinity of the married quarters were cleansed and flushed twice a week. The verandahs of the quarters were thoroughly scrubbed at least once a week, and accumulations of refuse in or about the quarters prohibited.

2. Protection of foodstuffs. Foodstuffs were covered with gauze to keep off flies and dust, and small wire gauze meat safes were provided for each quarter.

3. Regulation of milk supply. Tinned milk only was used, and arrangements were made with commanding officers to have both large and small tins of milk for sale at the grocery bars. Mothers were advised to open the tins by making two small holes in the lid, and to cover the tin with gauze, and to keep it in a vessel containing cold water when not in use.

4. Advice to mothers. Mothers were advised as to suitable clothing and food for children, and the necessity of reporting cases of sickness early was impressed upon them.

5. Isolation of cases and disinfection of stools, soiled linen, clothes, etc. The result of these measures was that in 1906 there were only 3 cases of enteritis, and no deaths, at Imtarfa, and this state of affairs is still being maintained. In 1908 the same sanitary precautions were advised for all married quarters in the island, and the results have been very satisfactory.

DISCUSSION.

Inspector-General R. BENTHAM, R.N. (retired), said that the number of cases of Malta fever contracted in the Royal Naval Hospital in 1905 was 105, and that after goat's milk was discontinued in 1906, and tinned milk substituted, not a single case of that disease had been contracted in the hospital.

Colonel HENDLEY said that Major Crawford's valuable paper showed the immense improvement which had followed modern scientific investigation of disease and the great part taken by members of the service in that matter. The discovery of the cause of Malta fever was perhaps the most brilliant of those discoveries. He remembered the time when Malta was practically prohibited to invalids and tourists: now they could reside there without risk.

ON THE PERMANENT ATTACHMENT OF TRANSPORT TO FIELD MEDICAL UNITS.

By P. BROOME GILES, Colonel A.M.S,
A.M.O., First London Division Territorial Force.

THE history of wars in the past, and the experience derived from peace manœuvres, not only absolutely prove but emphasize the failure of detailed transport for the use of medical units. Detailed transport, whether supplied on requisition from the Army Service Corps or hired from civilian sources, has serious complications.

If the transport is detailed on requisition from the Army Service Corps considerable delay is often inevitable, due to the interchange of the requisite army forms between the two corps. These at Aldershot and on Salisbury Plain generally have to be sent in several days beforehand. Even in cases of emergency hours often elapse before the transport demanded is supplied.

Whatever may be said to the contrary, there is no escaping the fact that there is a very possible element of discord in respect to discipline; for the detailed personnel of one branch of the service cannot have the same intuitive feeling of obedience to officers of another branch that they have to those of their own. Moreover, the branch to which they are detailed often considers them more as a means to effect an end, which feeling would not exist if the transport were part of their unit.

With hired civilian transport you have greater trouble, as the civilians are strangers to discipline, generally unpunctual and accustomed to their regular hours of work at their own pace, and the R.A.M.C. personnel look down at them as inferiors.

The horses generally are unfit for the work they are wanted to do—badly broken, entirely untrained and unaccustomed to service environment, the harness faulty, of various patterns, and often in bad repair.

The very wretched and inadequate results of using hired civilian transport, so evident during summer drills and camp training, is intensified on manœuvres. During the autumn manœuvres in 1907 in Oxfordshire and Buckinghamshire I several times saw tired troops, dependent for their rations upon hired civilian transport, foodless—because these casual civilian drivers failed to reach the bivouac; one saw civilian vehicles packed outside public-houses whilst the drivers were absent from their teams.

It is a most illusive idea to think civilian wagons and harness will do for medical units. The transport of medical units is in the first line, and may at any moment be subdivided; it is therefore essential that wagons and harness be of the best, and the various parts interchangeable. That being the case, there should be uniformity of harness and of the draught of the vehicles. This most certainly is not to be found either in civilian harness or wagons, for the variety of civilian harness is as great almost as the sets of harness are, and the angle of draught varies with each builder; the result frequently being that, though the horses may be used with their own collars, the harness is unsuitable to the vehicles, and the angle of draught upon the collar entirely different from the home work; the result—time cut to waste in adapting the harness to the horse and vehicle, and frequently after two or three days' work galled withers or shoulders, and horse useless for the remainder of camp training.

Personally I cannot imagine any one with practical experience advocating such procedure. The public money thus wasted would, I believe, pay for regulation breast harness and general service vehicles if purchased upon the hire system.

So much from the negative side. Now let us look upon the affirmative. The advantages of permanent transport are:

1. The transport sections recruited for each medica unit are homogeneous, part and parcel of the permanent personnel—practically of the same social ranks from which the unit is chiefly recruited. That factor is particularly noticeable in London and large cities. The transport officer is an officer of the medical unit, and under the immediate command of the officer commanding the unit, keen for the efficiency and the best interests of the unit.

These factors are most important with Territorial troops, whose very existence, much more their efficiency, is *esprit de corps*.

2. In Territorial medical units hired civilian transport can neither be popular nor successful; under the present conditions men have enlisted to the transport sections keen for work; but when they realize that their practical training will be with civilian wagons and harness, I feel sure this enthusiasm will dwindle away, chiefly for two reasons: First, because as transport men they want the same material that their co-ordinates of the regular Army Service Corps have; they dislike their association when soldiering with Mr. Jones's or Mr. Smith's wagons. Secondly, because there is so little the transport can do outside their drills and camp training. If each transport section had its general service wagons, harness, and saddlery, it would have work all the year mounting and dismounting wagons and harness.

If something on these lines is not done, I greatly fear the keen good men will languish, and their places be taken by those who, refused by the Yeomanry, and wanting to wear spurs, will join transport sections for that inducement.

This seems to me to approach the subject of this paper from the two practical sides—namely, with the result that permanent transport is requisite for each field ambulance, and to obtain the highest standard of efficiency it must be part of the personnel, and its material must be that of the regular force.

This at least is my experience, gained first as one with years of practical acquaintance with horses. Secondly, from my observations in training the present transport sections of the division.

The Territorial Force is a stage in the national development of the Volunteer. The better the head quarters, the more the club life that existed there, the more the Volunteer co-ordinated with his regular branch, the higher the efficiency and discipline.

So now with the Territorial. Give him suitable head quarters, encourage his presence at those head quarters, and give him the uniform and equipment which the corresponding branch of the regulars has, and he practically will make his unit his home, and in no case more so than with the transport sections of medical field units.

A BRITISH MAN-OF-WAR AT MESSINA.

By Staff Surgeon F. F. Mahon, R.N.

I would preface these remarks by observing that relief work was carried out by the British Navy at several towns on the Calabrian coast involved in the earthquake by which Messina was destroyed, but the experiences described in this paper are those met with at the remains of the latter town, where the work came under my own observation.

On the evening of December 28th, 1908, wireless messages were received at Malta, telling of rumours that Messina had been destroyed by an earthquake, but that as all telegraphic communication was cut off from that place, definite news could not be obtained. Next morning the rumours were confirmed, and H.M.S. *Minerva* was ordered to take in various stores and to prepare for sea at once. Having during the day embarked four extra medical officers from other ships, and taken on board a large supply of medical stores, blankets, and provisions, the ship left Malta for the scene of the disaster on the evening of December 29th, and soon after arrival, at the request of His Majesty the King of Italy and by permission of the Italian Admiral, rescue parties were landed, and a central medical station established ashore.

As the houses were all more or less damaged and dangerous to stop in, difficulty was at first experienced in finding a suitable building for the purpose. The electric light station, a one-storied building close to the beach, was soon decided upon and taken possession of. A Red Cross flag was hoisted at the gate, and surgeons, sick-berth stewards, and stretcher parties installed there, with two men who spoke Italian to act as interpreters, and marines (unarmed) for gate sentries. A supply of surgical dressings was taken ashore, with stimulants, soup, cocoa, etc. Water was brought in barricoes, for all water-pipes being broken, no shore supply was available.

The rescue parties—some 180 men—were divided into bodies of 20 men, each under officers. These parties carried picks and shovels, a number of picks being made by the *Minerva's* blacksmiths for the occasion. Every man had a filled water-bottle, and with each party a supply of brandy was brought.

The wounded, as they were rescued from the collapsed buildings, were carried to the central station on stretchers, which were for the most part improvised from doors, planks, etc. There they were attended to by the surgeons, and then embarked on stretchers laid along the thwarts of the ship's boats; the boats as they were filled being towed to the *Minerva* by her steam cutter, the wounded on arrival being hoisted on board in cots, and placed on beds and folded blankets on the bluejackets' mess deck, between decks, the sailors camping out in other parts of the ship for the time being, a large number of them, as a matter of fact, spending practically all their spare time in attending to the wants of the unfortunate refugees, giving up both time and living space with the utmost cheerfulness. As the cases were seen on board, a label was attached to each, bearing his or her name and the nature of the injury, a nominal list being also kept.

Owing to the early hour at which the earthquake took place—about 5.20 a.m.—practically all the inhabitants were in their beds at the time, this accounting for the small proportion of the population who escaped serious injury or death; and although at other points of the town an Italian and a Russian dressing station had been established, much difficulty was experienced for the first few days in coping with the situation, both by the rescuing parties and at the central station. At the latter the wounded arrived at times in a continuous stream; and the five rooms available for patients soon having their floor space fully occupied, an outer yard was converted into a temporary ward, by the aid of a large deck awning, with which it was covered in.

As fast as ships became available for transport, all the wounded were sent off in batches for passage to hospitals at Naples and Syracuse; consequently little operative work of a major character was carried out at Messina. As the wounded, in addition to their injuries, were suffering from starvation when rescued, each when received was given hot bovril or cocoa, with stimulants or morphine, as their condition indicated.

On December 31st Her Majesty the Queen of Italy went on board to visit the wounded in the *Minerva*—an honour which was received with the utmost joy and gratitude by the unfortunate refugees.

The difficulties and dangers encountered by the men working amongst the ruins can scarcely be exaggerated. As an instance of the risks this work involved I may mention the case of a bluejacket who, having heard groans issuing from a house which had partially collapsed, with the aid of a Russian seaman, broke a hole through the roof: both then lowered themselves down through the narrow opening, and crawling along in the dark, broke through a partition wall, and eventually succeeded, after two hours' work inside the house, in extracting a woman who was the only survivor of four, the other three having been killed outright by falling masonry and débris; the rescued woman had one leg very badly crushed. This was the kind of work carried on all day, with "after shocks" recurring at intervals, and shaken walls and roofs collapsing.

During the five days H.M.S. *Minerva* was at Messina about 500 wounded were treated at the shore station, and a brief account of the nature of the injuries met with may be of interest, as giving some idea of the effects of an earthquake from a surgical point of view. The first of the rescued sufferers had been under the ruins for over forty-eight hours, suffering from wounds covered with dust and débris; many with fractured limbs pinned between broken beams or pieces of masonry, several of the fractures being compound. In these circumstances, as may be imagined, many of the wounds were in an extremely septic state. Gangrene was commencing in not a few of the cases, and it is not surprising that several cases of tetanus had subsequently to be dealt with at the Syracuse hospitals. The majority of the injuries consisted of severe and extensive contusions and lacerated wounds, many of the cases being literally bruised all over. This, combined with the trying conditions under which the patients had existed before being rescued, produced shock, which in several cases ended fatally.

Fifty-three of the wounded had sustained fractures, many of which were multiple, a number being compound. Several of what one may call the classical fractures were represented, such as those of Colles and Pott. Two cases of fractured pelvis were seen. Of the fractured skulls, only one was of the base. One man had his scalp partially torn off, exposing a clearly-shown stellate fracture. The dislocations included three of the hip and two of the clavicle, the latter being both of the inner end forwards. Twenty cases of severe burns were treated, many of the other injured being also burnt. Amongst the other cases seen was one of ruptured urethra, occurring in an elderly man, probably caused by his falling astride a beam when his house collapsed. A man who had been shot through the chest by an Italian soldier for looting was brought in by his friends for treatment.

The experience gained can scarcely fail to be of service to medical officers who may find themselves employed upon relief work under similar circumstances. There should be less difficulty in deciding the kind and amount of medical stores required; the supply of nurses, male and female; of water, splints, medical comforts, etc. The number of wounded to be dealt with make it essential that a very large supply of surgical dressings of various kinds should be available. Taking as a whole the work done at Messina, and at Reggio, Canitello, Scylla, and other places on the Calabrian coast, between which the available medical officers were divided, the following are some of the quantities of dressings expended by the British men-of-war engaged:

Bandages of various kinds—8,799.
Gauze—6,690 yards.
Lint—311 lb.
Wool of various kinds—over 3,000 lb.

The fact that there were at first no women to assist in the care of the female patients was a source of much inconvenience in the *Minerva*, as will be understood when I say that there were at times over 100 badly injured women on the mess-deck of that ship, the greater number of whom had been incapable of moving since the occurrence of the earthquake some days before, all the necessary attention to their bodily comfort and cleanliness

having to be carried out by sick berth stewards and blue-jackets, to the best of their ability. Consequently, great was the relief when, on January 1st, two sisters of the Naval Nursing Service arrived in H.M.S. *Duncan* from Malta Royal Naval Hospital, to join the *Minerva* by order of the naval Commander-in-Chief.

At each station the want of something in the nature of a recording office was felt. At Messina the rush of patients on the first day made it impossible to take even the briefest of notes; this difficulty being surmounted on succeeding days by landing a clerk, whose sole duty it was to take a note of all cases treated, from the dictation of the surgeon; in some cases a note being pinned to each on clothes or bandage, mentioning the injury, and sometimes a word as to its seriousness or otherwise. This was to save the time of the medical officer left on board, either one or two being left to receive the wounded sent off. The experience of the first few hours also led to the addition of a carpenter to the establishment of the central dressing station, for the purpose of sawing up and trimming wood, to keep up the necessary supply of splints.

On January 4th the situation had become sufficiently adjusted to enable the Italian authorities to carry on the work, and that evening H.M.S. *Minerva* left for Malta, bringing back naval medical officers and Maltese civilian doctors from Reggio; and two refugees, one a son of the British Vice-Consul who was killed at Reggio; and a Sicilian woman whose arm had been amputated in the *Minerva* on the last day, and whose state did not permit of her being moved before we left.

On the way the ship called at Syracuse to land the Maltese doctors for service at the hospitals in that town, where their help was urgently needed, and where I am informed they did splendid work.

THE EXISTING AMBULANCE ORGANIZATION OF THE HOME RAILWAY COMPANIES;

WITH SUGGESTIONS FOR ITS AMPLIFICATION AND UNIFICATION.

By J. M. CARVELL, M.R.C.S., L.S.A.,
Surgeon, St. John Ambulance Brigade.

THE course of instruction which railway ambulance men go through is in accordance with the syllabus of the St. John Ambulance Association. It extends over a period of five weeks. There are five lectures, with an interval of seven days between each, followed by an examination.

The first lecture treats of: (*a*) The principles of first aid; (*b*) a brief description of the human skeleton and of the muscles; (*c*) fractures—causes, varieties, signs, and symptoms; (*d*) treatment of fractures, general rules; (*e*) the triangular bandage and its application.

The second lecture covers: (*a*) Treatment of fractures, details of treatment; (*b*) dislocations, sprains, strains—signs, symptoms, and treatment; (*c*) the heart and blood vessels, the circulation of the blood; (*d*) haemorrhage and wounds, general rules for treatment; (*e*) the triangular bandage and its application.

The third lecture deals with: (*a*) Haemorrhage and wounds, details of treatment; (*b*) internal haemorrhage—signs, symptoms, and arrest; (*c*) haemorrhage from special regions—signs, symptoms, and arrest; (*d*) bruises, burns, and scalds, bites and stings, frostbite; (*e*) foreign bodies in the eye, ear, and nose; (*f*) the triangular bandage and its application.

The fourth lecture includes: (*a*) The nervous system; (*b*) the organs and mechanism of respiration, artificial respiration; (*c*) insensibility; (*d*) poisoning.

Finally, in the fifth lecture are described: (*a*) Improvised method of lifting and carrying the sick and injured; (*b*) methods of lifting and carrying the sick and injured on stretchers; (*c*) the conveyance of such by rail or in country carts.

The Examination.

The examination consists of a practical and a theoretical portion. The theoretical is either by a written paper or by *viva voce* questions. In the majority of railway examinations the written paper is dispensed with, owing to the fact that the premises are not suitable.

The examination consists of at least five tests. In the practical part each candidate must treat a case of supposed fracture and a case of supposed haemorrhage, and then do either stretcher or hand-seat exercise, or perform artificial respiration. In the *viva voce* two questions have to be answered.

The maximum number of marks is 20 per test, making a total of 100. For a pass for a certificate a candidate must obtain 50 per cent. For a voucher—that is, the first re-examination—twelve months having elapsed after obtaining a certificate, 55 per cent. of marks have to be obtained. For the medallion examination, taking place after a lapse of twelve months from obtaining the voucher, the pass standard is 60 per cent. For the label examinations, which can be entered for at intervals of twelve months, the first twelve months after obtaining the medallion, the standard is 60 per cent.

The textbook in use is the official manual of the St. John Ambulance Association, *First Aid to the Injured*, by Mr. James Cantlie, F.R.C.S.

Organization.

The classes are organized either as detached classes, got up by the employees themselves, or by a centre of the St. John Ambulance Association. In the majority of the classes the whole cost of instruction and examination is borne by the railway companies, especially those having centres. On other lines, where detached classes are held, a money grant is made, varying from three to four shillings to each man who obtains his first certificate, and in a few cases a further grant of one to two shillings is made to each man who passes his second or third examination.

Encouragement to take up ambulance work is given in different ways on different lines—such as rewards for proficiency, rewards for work done, additional passes, medals, certificates of honour, competitions, and prizes. Of course, the great incentive to railway ambulance work is the Inter-railway Shield, which is offered for annual competition by the St. John Ambulance Association. Each railway has the right to send a team, consisting of five men, to compete.

The preliminary competition is held at St. John's Gate about the end of April. The six highest teams in the preliminary compete again in the final during May. The members of the teams competing in the final receive handsome prizes, and the company represented by the winning team holds the shield for one year.

This competition necessitates the holding of competitions on each line to pick out its representative team. This year on the Great Western and South-Eastern and Chatham railways alone 150 teams competed.

For the purposes of this paper I communicated with most of the railway companies in England, and find that the first aid material usually supplied for use on the various lines consists of boxes, hampers, and haversacks containing splints, triangular bandages, roller bandages, lint, gauze, cotton-wool, antiseptics, tourniquet, strapping plaster.

The means of transport consists of stretchers, litters, and carriages.

CONCLUSIONS.

It seems to me that all railway ambulance men should be given an elementary knowledge of nursing and sanitation. The men's wives should also be encouraged to go through elementary instruction in home nursing and sick-room cookery.

As to transport, all guards' vans should be fitted with rings in the roof for the suspension of stretchers, and looped ropes should be carried for attaching the stretchers to the rings. On those lines on which corridor trains are run a percentage of stretchers should be provided with telescopic handles, as they can then be carried in the corridor compartments, when placed cornerwise.

The easiest method of bringing about unification between the companies would be through the St. John Ambulance Association. All railway companies who have not already done so should form centres of the association. Then a Home Railway Committee should be formed, which could meet at St. John's Gate, the members of the committee to be nominated by the railway companies and the St. John Ambulance Association.

DISCUSSION.

Captain W. SALISBURY-SHARPE said that there appeared to be little co-operation or unity of method between the

different railway companies respecting the way of keeping up the men's interest and efficiency in the work. The result of prize competitions was too often to develop a few teams of highly skilled men rather than a large number of competent ones, the latter being the result desired. A better plan appeared to be that in use in the South-Eastern and Chatham service, where an additional annual benefit in the way of holiday pass was granted only to such men as were up to date in their ambulance knowledge, as proved by a recent re-examination.

The President said that it was only fair to Dr. Carvell that the Section should know that the paper read that morning was not the complete paper originally sent in. That was much more elaborate and comprehensive, but on account of its length had to be curtailed.

Lieutenant-Colonel E. M. Wilson said he had listened with great interest to Dr. Carvell's paper, and agreed that it was more desirable to obtain a large number of efficient men than a few very highly trained squads for competition purposes. Probably, however, better results would ensue from consultation between those responsible for teaching in the different railways than by asking St. John's Gate to lay down additional rules and regulations. So far as the central authority at St. John's Gate was concerned, inducements were already offered by granting medallions after re-examination, and subsequently labels. In each re-examination a higher percentage of marks was required as a proof of higher efficiency. If some stringent rules were laid down at St. John's Gate the result might be rather to hamper progress and to interfere with the individual freedom and discretion left to the local instructors and examiners. He suggested that the committees of the various railway companies should consult among themselves with a view of obtaining rather more uniformity of procedure, and he felt sure that any representations and suggestions would be most carefully considered by the Central Executive Committee at St. John's Gate. The system mentioned whereby some railway companies granted additional facilities in the way of "passes" to men who maintained their efficiency seemed to him to be of the utmost value.

Colonel Hendley agreed with Colonel Wilson that St. John's Gate would welcome any such suggestions, but he also shared his opinion that it would be best if the railways could consult among themselves, in the hope that these might arrive at greater uniformity, and that the benefits of training might be more widely extended, for he thought with other speakers that improvement was needed, as there was a strong tendency for a few enthusiastic men to acquire skill, and for the great body of railway servants to be discouraged and not to keep up their knowledge. No men had such frequent opportunities for the practice of "first aid," but these opportunities occurred everywhere on the railways, therefore as many men as possible should be trained. As an illustration of the need of "first aid" knowledge, he mentioned a case in which the man at a railway dépôt had been called upon to give it within a few weeks. He thought that representatives of the railways with others from St. John's Gate, as for example Colonel Wilson himself, whose experience was very large, might soon effect the desired results. It was evident to all who had seen, as he had done, the keen enthusiasm of those who took part in the final competitions for the railway shield, that a great deal of good work was being done; and after all, as these represented more than 1,000 men throughout the country, there was a wide diffusion of useful knowledge. The railway and the police had especially benefited by ambulance training, but he agreed with the Commissioner of Police of London when he told him that a single course of training was insufficient.

RHINOLOGY AS AN AID TO DIAGNOSIS OF PULMONARY TUBERCULOSIS:

WITH SPECIAL REFERENCE TO THE PHYSICALLY SELECTED CASES.

By W. C. Rivers, M.R.C.S., D.P.H.,

Resident Medical Officer, Barrasford Sanatorium, Newcastle-on-Tyne.

Existing supplementary means of diagnosing consumption are mainly bacteriological; they proceed, that is, from study of the seed of tubercle rather than of its soil. Certainly many physicians, examining a suspected case of phthisis, will note the physical conformation, the presence or absence of characters like flat chest, light weight, winged scapulae, etc. But diagnostic indications furnished by the *habitus phthisicus*, as usually described, are far from definite, and predisposition to tubercle is generally deemed an enigma. A non-tuberculous abnormality of the consumptive, to which as yet hardly any attention has been given, is the state of the upper air passages above the larynx. It is, indeed, the fact that already there exists evidence (given in two previous papers[1]) quite establishing this much, at any rate—namely, that simple intranasal and post-nasal abnormality is much commoner among consumptives than in non-tuberculous subjects. What in addition is highly probable, what completer investigation will almost surely reveal, is that impairment of nasal respiration often acts as a predisposing cause of the disease. This conclusion could not fail to have an important bearing upon prophylaxis, and especially upon the medical examination in recruit enlistment. But the subject needs exploring further first, and meanwhile two practical applications of the neglected truth mentioned may be made at once—the first to treatment, the second to diagnosis.

Years ago Ziem[2] commented rather bitterly on the plan of treating certain consumptives with tuberculin, while leaving their considerable nasal discharges quite untended. Long before reading these remarks, the present writer had become of the opinion that with not a few sanatorium patients the very first measure of treatment indicated was to syringe out the nose. Clearly, from the therapeutic standpoint, it does not matter how a consumptive came by his post-nasal catarrh, his nasal obstruction, or his atrophic rhinitis; whether the rhino-pathological condition be the cause, or effect, or mere concomitant of the pulmonary one, it requires remedying all the same. And similarly with diagnosis. Whatever the significance of these frequent faulty nasal conditions, the truth remains that they are characteristic of the phthisical patient. Although the point has not been urged before, it is contended, to put the matter in plain language, that on the whole it is a distinguishing mark of consumptives to have something wrong with their nose, and that this should help in identifying them.

The evidence that the writer has here to offer is based on study of the following clinical material:

(*a*) 208 male sanatorium patients examined, and most of them also treated, during the last two years.

(*b*) 81 consumptives from the physically selected classes—namely, 20 of naval ratings, 57 soldiers, and 4 policemen. The majority of these and all the following cases were seen this year or last with a Cresswell Baber lamp at Haslar, Netley, Woolwich, and Millbank, and thanks are due for much courtesy received at these places.

(*c*) 135 non-tuberculous members of the physically selected classes—83 of naval ratings and 72 soldiers—the greater part suffering from mild gonorrhoea.

Obviously the ideal way of estimating the significance of the nasal lesions presented by consumptives is by comparison with the normal population. The comparison between B and C is a fairly near approach, barring the smallness of the numbers, to this ideal, for the cases are all of one sex, are drawn from the same social strata, and have been exposed to much the same conditions of life. Class C, the "control," was, however, rather a severe one—that is, it contained more than a fair share of rhino-pathological cases—for the reason that there was a larger contingent of naval stokers in it than in Class B. These men showed more nasal abnormality than those of seamen ratings. One stoker, a case of gonorrhoea, had the largest "posterior ends" the writer has ever seen. The left one overlapped the right, and together they hid the posterior edge of the septum almost completely, and nearly filled the lower part of the naso-pharynx. This occupation incidence is what might have been expected. Röpke[3] states that German naval stokers and engineers suffer oftener than the sailors from affections of the upper air passages, attributing the fact to the nature of their work. Then the tuberculous patients were rather older than the others. Further, in the services no men are enlisted who are obvious mouth-breathers, with the superior dental protrusion and characteristic facies seen, for example, in the photographs of consumptives appended to Galton and

Mahomed's[4] paper on the physiognomy of phthisis.* But practically these phthisical and venereal sailors and soldiers are good material for the purpose, much better than the consumptives and heterogeneous hospital patients of both sexes examined by Payson Clark[5] and Ducos[6]—the only other authors known to the writer to make a set comparison.

The chief points of difference—the points therefore of diagnostic importance—were found to be as follows:

I. *Nasal Obstruction from Septal Deformity.*

In A class 30 per cent. exhibited this condition; in B class 34 per cent.; and in C class 20 per cent.

Dislocated septal cartilage of varying degree occurred in 14 per cent. of A, 9 per cent. of B, and 5 per cent. of C. This frequent asymmetry of the nostrils, noticeable in any large collection of consumptives, especially easily when they are in bed, is commended as a verifiable observation to the attention of those who find the idea of intrinsic phthisical predisposition old-fashioned. To continue, it is not proposed to cite all the authors (going back at any rate to Piorry)[7], who have recorded some manifestation of the fact that nasal obstruction is common in phthisis, but merely the available results of comparisons with the normal, which seem to be only four in number. This plan will be followed throughout. Payson Clark found marked nasal obstruction from septal deformity in 16 per cent. of consumptives, and not at all in control cases. Ducos's protocols show it in 51 per cent. of male consumptives and in 44 per cent. of male controls; Schönemann's[8] figures for septal deformity are 36 per cent. for the first class, 13 per cent. for adult non-tuberculous males (with Harke[9] they are 46 per cent. and 30 per cent. respectively). The two latter authors were investigating by autopsy quite other rhinological questions, and in point of fact this excess of septal deformity amongst consumptives escaped their notice.

II. *Intranasal Atrophic Conditions.*

These were present in 11 per cent. of A class, in 20 per cent. of B class, and in 5 per cent. of C class.

The criterion of atrophy adopted was visibility of the posterior wall of the naso-pharynx on anterior rhinoscopy. It is true some rhinologists maintain that in a wide nose this may be the normal condition, but the discrepancy noted above does not seem to support this view. Two previous workers, Payson Clark and Alexander,[10] have attempted to classify the amount of atrophy present, but most of their distinctions become subjective in practice, whereas the visibility or not of any part of the posterior naso-pharyngeal wall is quite definite. Sometimes atrophy was present on one side and obstruction on the other, suggesting over-use of one side of the nose as the cause of the former condition. Crusting was by no means always present. Clark found atrophy in 73 per cent. of consumptives, as against 43 per cent. in the non-tuberculous. Ducos also noted a large excess, but his figures cannot well be quoted because he grouped (arbitrarily, as it seems to the writer) certain other appearances together with atrophy into a complex styled "coryza pseudo-atrophique tuberculeux." Schönemann's protocols do not give intranasal atrophy commoner in phthisis, but Harke's, dealing with larger numbers, show 19 per cent. of male consumptives, but only 8 per cent. of non-tuberculous males, affected thus.

III. *Muco-purulent Secretion, or Crusts, in the Naso-pharynx.*

The A class showed 10 per cent. to be suffering from these conditions, the B class 12 per cent., and the C class 4 per cent.

Thickening of one or both sides of the posterior edge of the septum was also commoner in the consumptives.

The secretion in the naso-pharynx was in most cases due to post-nasal catarrh. This symptom, however, may, of course, sometimes result from sinusitis, which affection is excluded from the cases in A. Nasal sinusitis is probably relatively common in consumption, and it is perhaps significant that 3 per cent. of cases in B, but only 1 per cent. of C, were suggestive of this condition. Of course, in the absence of necessary full examination, a definite diagnosis could not be made. Of the four authors quoted, only Ducos can be said to make adequate notes of the condition of the naso-pharynx, or of the next point, the anamnesis as regards nasal condition. His male cases are few, but they work out at:

	Muco-purulent Secretion or Crusts in Naso-pharynx.	A History of Nasal Symptoms.
Phthisical ...	About 22 per cent.	54 per cent.
Control	About 8 per cent.	16 per cent.

IV. *A History of Nasal Symptoms.*

Class.	Nasal Obstruction, Unilateral or Bilateral.	Epistaxis.	Previous Rhinological Treatment.	Crusts from the Nose.
	Per cent.	Per cent.	Per cent.	Per cent.
A	28	7	5	3
B	38	8	2	9
C	13	2	1	(1 case)

This history often antedated the pulmonary one; further, the proportion of distinct nasal abnormalities, or indeed of each separate variety of abnormality (except small dry crusts in the nose, like those seen in rhinitis sicca, which seemed commonest in advanced phthisis), was about the same in those cases in Class A, with two lobes or less affected, as in the remainder. Ducos reports a large percentage of nasal lesions in cases of pleurisy only. All this is of interest because it is, of course, in early phthisis that diagnosis is most difficult and also most important. To sum up, then: Since the proportion of nasal defect in A, the sanatorium patients, was almost uniformly less than in B, the phthisical sailors and soldiers, there can be no objection to striking an average of both in order to make a comparison with C, the non-tuberculous members of the physically selected classes. The consumptive sailor or soldier, therefore, is likely to depart from the general or "normal" nasal condition in the measure indicated below:

Six times as frequent: A history of getting crusts from the nose.

Three times as frequent: An appearance of the posterior naso-pharyngeal wall on anterior rhinoscopy; a history of epistaxis.

More than twice as frequent: Dislocated septal cartilage; muco-purulent secretion or crusts in the naso-pharynx; a history of unilateral or bilateral nasal obstruction, constant or intermittent.

Half as frequent again: Nasal obstruction from septal deformity.

These facts, it is contended, should be utilized in the diagnosis of doubtful cases; and not only in the services, but universally.

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DISCUSSION.

The PRESIDENT said that the paper was to be welcomed in the Section chiefly because of its value where recruiting was concerned.

Captain W. SALISBURY-SHARPE said the paper was valuable as additional evidence of what was fairly generally known, at all events among those practising rhinology, that nasal deformities, especially of an obstructive character, favoured the development of phthisis. It also further proved, what was fairly commonly known, that nasal deformities of all kinds were extremely common, both among the tuberculous and the non-tuberculous, and showed that point so well that it quite disproved the title of the paper, and showed that such deformities had no diagnostic value at all.

* It is true these authors claim only negative results. Nevertheless they mention "narrow open mouths with prominent upper teeth and short small chins" as "forming a frequent type in phthisis." Probably, if attention had been directed exclusively to the character of the nose and upper teeth, and to the disposition of the mouth, even without the aid of composite photography some quite positive results might have been obtained.

A DETAILED SCHEME FOR AN UNEXPECTED LANDING PARTY USING MATERIAL AVAILABLE ON BOARD SHIP.

By Staff Surgeon J. G. WALLIS, R.N.

I DO not propose to bring forward any new ideas to-day. I consider, however, that the question of an unexpected landing of an armed force from a man-of-war is so important that a detailed scheme, using material available on board ship, should be always ready to the medical officer's mind, and I hope this is sufficient excuse for bringing forward this paper.

The conditions, climatic and otherwise, under which we may be called upon to work are so various that it is not expedient to enter into them all, even if I had the time at my disposal. I therefore propose to take a working example, which will only require certain modifications to suit each particular case.

Let us suppose that orders are received one afternoon in a ship lying off a foreign port to land 150 men at 8 a.m. on the following day for the protection of the British Consulate. The ship is then to sail, and it is probable that no British ship will be available to go to that port for five days. The party is thus to be left to its own resources for that time. It is understood that while on shore a room will be placed at our disposal as sick quarters. Let us suppose that the ground chosen for the camp is half a mile from the landing place, and that the nearest water supply is from a stream a quarter of a mile further inland, the water being of a doubtful nature, and it will not be safe for the men to be constantly going to and from that stream to fetch water, on account of the enemy's fire.

In the first place, what personnel shall we require?

One medical officer and one sick berth rating will probably be all that can be spared from the ship. Twenty-four stretcher men, in charge of a petty officer, who might also carry ashore our stores, and act as a "sanitary squad." In *Rifle and Field Exercises for His Majesty's Fleet*, it is laid down that there should be not less than two stretchers for every fifty men, and four bearers per stretcher, which the twenty-four men will give. I mention this, as it is possible that it might be argued that twenty-four are too many non-effective units for a force of 150. I think, however, if we employ them as a "sanitary squad" as well, the estimate is a small one. In a case like this example, also, we must be prepared for sorties, when our stretchers and stretcher men may be severely taxed.

It is obviously desirable that all the stretcher men should have received instruction in "first aid to the injured." There will be no time for this to be done with such short notice, and therefore, it should be our duty to see that the men we have on such an occasion have received the instruction which is always given to some men in a ship. Special stress should be laid on the methods of obtaining and purifying water, and on the appalling risks of drinking water from an impure source.

I am supposing that we can rely on no help, neither in the way of material nor men, and I suggest, for this purpose, that such a "sanitary squad" might well be organized on board every ship. They should be under the control of the medical officer, and to them would fall the duties of making and keeping in order the field latrines, and of preparing and controlling the issue of the water, of generally assisting the medical officer in his work and in the camp sanitation, and of bearing stretchers.

In the morning, before landing, it would be advisable, when the men are fallen in, to issue first field dressings. This might be done by the medical officer, who could satisfy himself that the available dressings were attached to the men's clothing, and who could, at the same time, make a hasty medical examination of the men of the party, and give them a chance of making any complaint to him as to their fitness for landing.

Since only about one hundred such dressings are carried on board ship in ordinary circumstances, we shall have to use our judgement as to whom to attach them to, not omitting the stretcher men. Of course, if warning of the landing were obtained, the ship would be supplied with a quantity from the Naval Medical Dépôt.

The instruments and materials available will be considered under several headings.

1. Field chest No. 1 weighs 67 lb. and can be readily carried by two men, if slung on a pole. It contains chiefly drugs, and includes a hypodermic syringe with the usual tabellae for hypodermic medication, transfusion apparatus, and a candle and matches. Also it contains a bottle of brandy and some extract of beef.

2. Field chest No. 2 contains chiefly surgical dressings and instruments. It likewise weighs 67 lb. Among its contents may be mentioned a pocket case of instruments, a sterilizer for instruments, and an amputating case.

3. The medical field service valise weighs 12 lb., and would be carried by the sick berth steward. It contains some dressings and splints, some important drugs in tabloid form, a hypodermic syringe and tabellae for use therein, and some needles and silk sutures. It contains also a bottle for hypodermic injection of morphine. It must not be forgotten to have this filled before starting, as it may be wanted in large quantity, and dissolving the tabellae is a comparatively slow process.

4. No. 3 chest of emergency surgical dressings contains dressings, and is only to be opened on emergency. Four of them are supplied to a big ship, and each weighs 70 lb. It would be well to land one of them in a case like this, which would form a load for two men, if slung on a pole. The others might be opened to take out the first field dressings, unless these were obtainable from some other source.

5. The six stretchers would be landed by two men each—that is to say, twelve men in all.

6. The naval first field dressing is a compact parcel, with short directions on the outside. The parcel contains a pad of gauze and one of cotton, a piece of mackintosh, a bandage, and two safety pins.

7. The water test box weighs 4½ lb., and might prove a useful adjunct to one's outfit.

8. As regards personal equipment for the medical officer, as he should be lightly equipped, I think it unnecessary for him to take his own private pocket case of instruments. An excellent case is supplied in Field Chest No. 2, which can be taken out, as other instruments are left for operating.

Then two clinical thermometers are found in Field Chest No. 2, and a hypodermic syringe and morphine in the field valise, so the surgeon need not be hampered with these things, but a stethoscope should not be forgotten.

Brandy and candles are not found in the field valise, so the surgeon should not forget to carry these on his person. He must also not forget a clasp knife and matches, and the all-important morphine must be always handy, as should also a lantern for use at night time.

Eighteen men are thus employed carrying stores, and two more might carry blankets for the field hospital.

Next, as regards our field hospitals. No tents are carried on board ship. The number of sick and wounded to be provided for will probably be about 60 per cent. of the whole force, and we shall be unable to send them back to the ship, and therefore stretchers will have to be used as beds for the more urgent cases and for such operations as we might be called upon to perform. Of course, the wounded would be sent to the base hospital—in this case our ship—as soon as it could possibly be managed, and no operations would be done, except those of extreme urgency to save life. A large ship carries eleven stretchers. Considering the bulk of the operating table supplied, it is not advisable to land it on such an occasion as this.

Twelve blankets might be taken. These weigh 70½ lb., and would supplement those carried by the men. A mackintosh sheet might well be wrapped up in the same parcel. Then, in our hospital, we would have the contents of the two field chests and the emergency case of surgical dressings.

In the way of "medical comforts," we might supplement the daily ration for the wounded by a few tins of beef-tea and chicken broth, and some tins (say two dozen) of condensed milk should be landed for the hospital dietary. Then a couple or more of enamelled bowls might be taken for washing and containing antiseptic lotions. (The lid of the sterilizer would be the instrument tray, and the lids of mess kettles might be used for lotions, etc., if found necessary.)

Concerning the all-important subject of water, the ideal plan would be to have it all landed from the ship, unless we can be certain of the safety of the shore water; but in most cases this is impracticable, owing to its bulk and

weight. In the present case it is out of the question, and I would advise a kind of "sail bath" for storage—that is to say, tanks made of painted canvas on board the ship. A tank, 5 ft. by 4 ft. and 2 ft. high, would, allowing for 6 in. waste space at the top, contain 30 cub. ft. Four such tanks would contain 750 gallons, and would allow 1 gallon per man per day, as there are 150 men to be catered for for five days. Four small tanks are more manageable than one large one, and would allow for one or two of them being used for impure water and also for damage done by rifle fire or other means. Such tanks could easily be made out of material available on board ship.

For carrying the water from the stream to the camp I think the service mess kettle, perhaps, the best plan. The large kettle holds 5 gallons of water, and weighs 63½ lb. when full.

The naval water barrico holds 4 gallons, and weighs 52 lb. full, but would mean additional gear to be landed, and is, in the circumstances, unnecessary. The water, too, is apt to be fetid, and, when once infected, a barrico is very hard, if not impossible, to clean.

For carrying water on a march we must be guided by what extraneous aid we can obtain. A good plan is to utilize a seaman's painted bag, slung from a pole in a rope network. The ordinary allowance of water for drinking and cooking is at least 6 pints per diem. In the above estimate I have allowed for 8 pints.

The water will probably have to be purified by clearing and subsequent boiling. As some time will elapse before the water will be ready, the men should all land with their water bottles full, and not partially full, which is a mistake sometimes made. If circumstances permit, we might use some kind of a field service filter, such as one improvised with a smaller barrel inside a larger, the interspace being filled with sand, gravel, and charcoal. Unless we have the bed of a stream to place it in, it entails a lot of managing, and is useless for three days except as a simple clarifier.

The best means of clearing the water is by mixing alum, in the proportion of 6 grains to the gallon, or 2 oz. a day for the present case. Alum, with the lime in the water, forms a bulky precipitate of calcium sulphate and aluminic hydrate, which carries down with it mineral and organic matter.

The boiling of the water could be done in the mess kettles in the field kitchen; and this, together with the clearing, storing, and issuing, would be done by the "sanitary squad."

Field latrines would, of course, have to be built. For these, instead of the ordinary pattern, the "short trench principle," used in the army manœuvres, seems better. Such trenches are 3 ft. long, 1 ft. wide, and 1 ft. deep; parallel to each other, and 2½ ft. apart. There is no more labour entailed, and they are more manageable and safer, as water percolates through deep ones, and may pollute supply; 2 per cent. are required for a camp used for one day; 5 per cent. are required for a camp used for a longer period.

As for clothing, a "kit bag" made of Willesden canvas is now supplied. It can be carried across the shoulders or by the handle, and will hold the following articles: 1 blanket, 1 flannel, 2 pairs socks, 1 towel, serge suit (or white suit if the men land in blues), also soap. It weighs 4 lb. 6 oz. empty, and about 13½ lb. full.

Sailors' straw hats would be worn, or caps, according to circumstances.

Boots are an important point if any marching is to be done, especially for sailors, who spend so much of their time with neither boots or socks on. The uniform pattern of boot, with a broad low heel, should be insisted upon. Fancy boots, with high heels, should be rigidly opposed, to avoid intermittent pressure. It is important, too, to look to the boot laces. The accoutrements, rifle, sword bayonet, and field kit bag of a sailor on the march, without the clothes he is wearing, weigh nearly 38 lb.

In reply to an observation by the President, the author said that he wished to emphasize the suggestion of training a sanitary squad on board ship in peace time for the preparation of water for landing parties for a standing camp. For an actual march some notice would always be obtained, and then some means of dealing with water would have to be devised, since coping with the water supply question simply with material available on board ship would be impossible.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FRACTURES OCCURRING DURING EPILEPTIC FITS.

As fractures following epileptic fits are not common, I think the following will be interesting. The patient was a hard-working farm labourer, aged 43, with no previous history of injury, and no family history of epilepsy. He had had fifteen slight fits at different times before I first saw him about six years ago, when he was recovering from a violent fit, in which he had fallen on the ground and broken the lower jaw through the socket of the left canine tooth; the fracture healed soundly and in a good position. Six months later he had another fit, in which he fractured the lower jaw, this time through the right canine socket; the upper lip was so much cut that it required stitching. About six months later, during a fit, he fell on his left side, fracturing the arch of the left malar bone, leaving a marked depression. I did not raise the bone at the time, as I did not consider anything would be gained by elevating it except appearance.

Two years later he had a violent fit, falling upon his left side, fracturing the lower jaw through the left canine socket. A month ago he had another, fracturing the left side of the jaw in the same place.

Each time the jaw appears to have united quite soundly within a month, although the fracture was always compound; the mouth was irrigated with a lotion of 1 in 80 carbolic acid and a saturated solution of potassium chlorate. He has had occasional fits between the severe attacks mentioned. Most of the severe fits have occurred when he has been walking, usually on the road, without any warning, generally causing him to fall on his left side. The last fit occurred when he was upon a haystack; fortunately, he fell into a cart full of hay without hurting himself.

He responds readily to potassium bromide, and has not had any fits when under the drug, but unfortunately cannot be persuaded to remain under treatment for any length of time. He has been a total abstainer for five years.

Sidney J. O. Dickins,
Cowfold, Sussex. M.D.Brux., M.R.C.S.Eng., L.R.C.P.Lond.

Reports

on

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHRISTCHURCH HOSPITAL, NEW ZEALAND.

SAFETY PIN IMPACTED IN THE TRACHEA FOR TWENTY-FOUR DAYS.

(By P. Clennell Fenwick, M.D., Honorary Surgeon to the Hospital.)

A child, aged 6 years, was admitted into hospital on March 7th with a history of having inhaled a safety pin eight days before. He had been driven over a hundred miles to reach the hospital.

On admission the child was in a very weak condition, unable to speak except in a hoarse whisper; the lips were blue and the lower ribs retracted. Stridor was present.

A hasty laryngoscopic examination brought on a severe fit of choking, and the child became collapsed. *X*-ray examination showed the pin to be closed, and lying up and down the trachea, the lower end reaching almost to the sternal notch. The dyspnoea became so urgent that low tracheotomy was performed. The pin could not be felt with a probe passed up and down the trachea, so the patient was put back to bed with a tracheotomy tube in the trachea.

My colleague, Dr. Bell, honorary ophthalmic surgeon to the hospital, kindly took charge of the case. For the next five days symptoms of pneumonia were present, with some emphysema of the tissues of the neck and upper part of the chest. On March 12th, Dr. Crooke, the resident

medical superintendent, while inserting a fresh tracheotomy tube, felt the pin. Dr. Bell attempted to remove it through the tracheotomy wound, but the pin was so firmly wedged into the trachea that he was unable to move it without using undue force. He therefore postponed further attempts until the wound, which was in an unhealthy condition, had healed, intending to perform thyrotomy, and not wishing to infect the new wound from the old. On March 14th the child could speak quite plainly, and the stridor was noticeably lessened. On March 18th a second *x*-ray photograph was taken, and the pin was seen to have shifted from its original position.

On March 22nd a third *x*-ray photograph showed the pin lying in the right bronchus, and Dr. Bell reopened the wound and removed the pin from this position on March 23rd. The pin was blackened in parts, and covered with muco-pus.

The child was discharged well eight days later.

The first skiagraph, taken by Dr. Crooke on March 8th, shows the pin lying antero-posteriorly over the fifth, sixth, and seventh cervical vertebrae. The second negative, taken on March 18th, shows the pin lying slightly sideways, the upper end lying on the third dorsal vertebra. The last, taken on March 22nd, shows the pin in the right bronchus (apparently), the upper end lying on the body of the fourth dorsal vertebra, and inclining downwards to the right. The points of interest are the length of time the foreign body was present in the air passages, the rapid subsidence of the pneumonic symptoms, and the quick recovery directly the pin was removed.

Reviews.

DISEASES OF THE LYMPHATIC SYSTEM.

MR. ARTHUR EDMUNDS has written a book on *Glandular Enlargement and Other Diseases of the Lymphatic System* for the series of "Oxford Medical Publications."[1] The introductory chapter is on the general anatomy of the system, and is followed by one on the anatomy of the groups of glands which are amenable to local treatment. The latter is too lacking in detail to be of much use, and does not supply such an anatomical introduction as one has a right to expect in a scientific monograph. A short chapter on diagnosis enumerates many points of clinical importance, and includes a careful description of the differential diagnosis of the various types of glandular tumour. The subjects of cellulitis and erysipelas are considered next, and the author rightly draws attention to the necessity of preventing mixed infection in these conditions. He speaks highly of the value of irrigation in cases of cellulitis when the part is very brawny and painful, but disparagingly of treatment by baths; the cleanest method is irrigation through a bath. There is no mention of Bier's method of treatment—an extraordinary omission, in view of its undoubted value and its recommendation by the best authorities during the last three or four years. Chapter VI treats of acute infection of lymphatic glands, and gives a careful description of the condition and its treatment. There are considerable differences of opinion on the details of minor surgery, and if we venture to make some criticisms it must not be thought that we have any desire to dogmatize. The advisability of placing stitches at the extremities of a wound made to evacuate an acute abscess is questionable; infection along the stitch-tracks is inevitable, and would increase the unsightliness of the scar. There is a good deal to be said against the plan of opening an acute retropharyngeal abscess from the side of the neck according to the author's plan. It is not the case that a pharyngeal incision must entail the whole of the discharge being swallowed, if, as is proper, the abscess is opened with the head dependent. It is recommended that the surgeon should make a simple skin incision and work his way behind the carotid sheath towards the abscess cavity with a pair of sinus forceps, the position of which is determined by a finger in the mouth. It does not need the account of two cases of dangerous haemorrhage, one primary and the other secondary, which the author gives, to convince one that the method is distinctly dangerous. If sufficiently widely opened the ordinary acute retropharyngeal abscess follows an entirely satisfactory course when incised into the pharynx, nor is there any excuse for mistaking the acute abscess for a tuberculous abscess secondary to vertebral disease. Full consideration is given to the subject of tuberculous glands—in particular, tuberculous glands in the neck. The chapter on the latter deserves careful attention, and is the best in the book. The author discusses the commoner complications met with during operation; it is well to ask recognition of the fact that an extensive and advanced case calls for as much skill and care on the part of the surgeon as almost any other major operation. We do not agree with the author's use of silk as a suture material for nerves; sterile catgut is much to be preferred. The vaccine treatment of tuberculous glands is touched upon; $\frac{1}{500}$ mg. is surely rather a large initial dose, but carefully controlled by opsonic index observations is probably without risk. In the later chapters short accounts are given of diseases of the thymus gland, the surgery of the thoracic duct, oedema in its different forms, lymphangioma and the various types of new growth originating in the lymphatic system or affecting it secondarily. The author has contrived to cover an enormous area within a comparatively small compass, and the book is one that will be read with interest.

[1] Oxford Medical Publications. *Glandular Enlargement and Other Diseases of the Lymphatic System.* By Arthur Edmunds, F.R.C.S. London: Henry Frowde, and Hodder and Stoughton. 1908. (Post 8vo, pp. 238, figs. 19. 5s.)

GASTRO-INTESTINAL DISEASES.

NEARLY three years ago we reviewed (1906, vol. ii, p. 428) the first edition of Professor SCHMIDT'S pioneer work on the examination of the function of the intestine by the use of test meals. The second edition,[2] which was published last year, is mainly a reprint, but contains six coloured photomicrographs of the microscopical appearances of normal and pathological stools. As we pointed out in our former review Dr. Schmidt's methods are simple, and easily applied by any practitioner who cares to take the trouble, but their value, apart from the scientific interest of the research, is not yet definitely settled. His preparation of cascara agar, which is sold under the name of "regulin," has not proved in all hands a thoroughly satisfactory means of dealing with constipation.

Dr. MAX VERSÉ contributes to Marchand's *Arbeiten* a monograph of extreme importance on new growths of the stomach and intestines.[3] Two years ago we noticed M. Löhlein's treatise on the glomeruli in nephritis, and Dr. Versé's work is also a product of clinical and laboratory labour in the great Saxon centre of science and literature. We must turn the attention of British writers on pathology, editors and publishers of medical works, to the fine microscopic illustrations appended to this monograph. No doubt illustrated medical literature in this country has made great advances in excellence during the present generation, yet for elegance, clearness and accuracy Dr. Versé's photomicrographs are, as published, much above the average of their homologues in the United Kingdom. They will prove of great assistance to the student and pathologist. Dr. Versé considers that polypus and adenoma generally develop in areas already the site of chronic catarrhal affections, and that these innocent growths are the most common origin of cancer. The method adopted in this monograph is admirable. Over one hundred cases are reported, and the clinical features of each case and the microscopic appearances of the new growth are given in full. The summary of each series is judiciously treated, and there is a very long table of references, of much assistance to the foreign worker so often troubled when searching out the very scholarly writings of Lubarsch, Ribbert, Hauser, Versé himself, and several other living writers on cancer, and on new growths affecting the alimentary canal.

[2] *Die Funktionsprüfung des Darmes mittelst der Probekost.* Von Professor Dr. Adolf Schmidt. Zweite vermehrte und verbesserte Auflage. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. (Sup. roy. 8vo, pp. 81; Taf. 3. 3s.)

[3] *Ueber die Entstehung, den Bau und das Wachstum der Polypen, Adenome und Karzinome des Magen Darmkanals.* Von Dr. Max Versé. Arbeiten aus dem pathologischen Institut zu Leipzig, herausgegeben von F. Marchand, Vol. I, pt. 5. Leipzig: S. Hirzel. 1908. (Sup. roy. 8vo, pp. 181; Taf. 7. M. 8.)

In his monograph on the *Operative Treatment of Chronic Constipation*[4] Mr. ARBUTHNOT LANE sets out in detail the views on the pathology of chronic intestinal stasis which were more briefly stated in the address published recently in the BRITISH MEDICAL JOURNAL (June 12th, p. 1408), describes the symptoms which he holds to depend upon this condition, and explains the very radical treatment which, as is probably well known to our readers, he advocates for its cure. He prefers to speak of "chronic intestinal stasis," as being a more comprehensive term than "constipation," and he attributes this condition mainly to the formation of non-inflammatory adhesions which have developed to oppose the displacement of viscera. These adhesions are produced by the exercise of abnormal pressure or strain or are an effort of Nature to add to the efficiency of the skeleton. A most important factor in their production, according to Mr. Lane, appears to be the erect position which the genus *homo* has adopted; and he holds that the first stage in the development of chronic intestinal stasis is the dilatation and enlargement of the caecum, which, together with the ascending colon, becomes adherent to the posterior wall of the abdomen. These adhesions contract the lumen of the bowel, and bind down the appendix to the iliac fossa. When the caecum is full the appendix is dragged upon and becomes flexed abruptly, so that its lumen may become occluded and its secretions dammed up; inflammation follows, and if the appendix is approximated to the right ovary, it becomes a source of pain at each menstrual period. The transverse colon tends to drop and forms a loop with its convexity downwards, while the splenic flexure creates adhesions by which it is dragged upwards and backwards; the descending colon becomes adherent to the posterior wall of the abdomen, and the sigmoid flexure gets fixed and shortened while its muscular coat wastes, its lumen is reduced, and it often becomes adherent to the left ovary. The rectum becomes elongated, dilated, and hypertrophied; the stomach dilates so that its great curvature falls below the umbilicus, while the wall of the small intestine becomes thinned, its lumen narrowed, its coils adherent to one another and bands of adhesion form between adjacent loops. The kidneys become mobile in consequence of loss of fat, dragging of the large bowel, and weakening of the abdominal walls. Besides these mechanical results coprostasis produces a chronic toxaemia, revealed by pigmentation of the skin and conjunctivae, the skin of the hands becomes cold and clammy, the breasts tend to undergo cystic or even cancerous change, gastric and duodenal ulcers may develop, the gums are infected, and the teeth loosened. Mr. Lane's remedy is to exclude the large bowel, which, as a seat of toxin-producing processes, is wholly hurtful to its possessor. This may be done by anastomosing the ileum to the sigmoid or the rectum, or preferably by removing the whole of the large bowel. Except in very feeble people removal of the large bowel is said not to be accompanied by "any special danger to life," but early anastomosis obviates the necessity for this radical operation. The remedy is drastic, but it is interesting to note how many clinical observers approaching the subject from different points of view have become impressed with the importance in pathology of intestinal toxaemia.

SURGERY.

PROFESSOR BINNIE'S *Manual of Operative Surgery*[5] does not pretend to cover the whole range of the scalpel's activities. The first volume of this pregnant "little" book—its cubic capacity is deceptive—deals with operations on the head, neck, nerves, trunk, and genito-urinary system. The chapters on orthopaedic surgery and on the veins which appeared in the three previous editions of this volume have been deleted, to reappear in a new work that will form volume ii and contain operations on the extremities, the vascular system, etc. It is perhaps hardly necessary to remind readers that this is not a student's textbook. Routine procedures are deliberately neglected, and everything is written from the point of view of the operating theatre and not of the class-room. It is a compendium of surgical progress; all the newest operations that have attained acceptance at the hands of leading surgeons are included, with some few that seem hardly to have reached that point. We find practical accounts of Cushing's decompressive operations, of Killian's on frontal sinus, of Cushing's on the Gasserian ganglion, of Jonnesco's sympathectomy, of Halstead and Evans on the parathyroids, of recent surgery of the thorax, of the Mayos on gastric surgery, of Robson and Moynihan on the pancreas, and so on. In fact, it is a ready-reference book for the busy surgeon. Nor is it to be thought that it is merely a dishing-up of other people's labour; the author interjects many a shrewd remark upon abstracted accounts of original papers, and makes it quite evident that he speaks with the authority of large experience; it might be wished that at times he was a little more dogmatic, but he is eminently fair. The chapters on renal surgery and on the nerves have been entirely rewritten since the last edition, and contain a great deal of most interesting information. The outstanding feature of the book is undoubtedly the attention paid to every form of plastic surgery. Repair of defects in all the hollow organs is profusely illustrated, and means for the restoration of superficial parts, removed for or destroyed by disease, are described in considerable detail. Congenital defects, too, obtain ample space. There are over 700 illustrations, most of them good. It is a book to have by one.

Professor LESER'S volume on general surgery has been rewritten and enlarged for its second edition.[6] The scheme of the book is unchanged, and the various subjects are treated in lecture fashion; the whole forms a "course" in general surgery well suited to the needs of the student, and is also sufficiently detailed for use as a work of reference by practitioners. The enlargement of the work has considerably improved it; it does not now give such a general impression of condensation and an effort to say a great deal in a small compass as did the first edition. There is a new section in the earlier part on operations in general, and into this the section on amputations and disarticulations of the first edition is absorbed. The frequent use of the term "purulent infection," both in titles and text, conveys the suggestion of a pathology that is past, just as much as the "pyogenic" of the previous edition. The sections on infection (13–18) still require rearrangement before they can be considered to run in natural sequence. It would be better if a chapter on conveyance of infection, its extension, and the resistance of the body, were followed by others on the specific infections. As before, the subject of tumours is very fully treated. It is hardly necessary to say that throughout the book the teaching is sound and practical. Professor Leser's style is attractively simple, and the result is a work both easy and pleasant to read even for those whose knowledge of idiomatic German is not extensive.

The manual of *Surgical Handicraft*,[7] so long associated with the name of the late Mr. Walter Pye, has in its latest edition been subjected to free revision. Indeed, it has taken on a new form, as it has not only been largely rewritten by Mr. CLAYTON-GREENE, but includes also much new matter contributed by colleagues and friends. Although this division of labour must have caused the editor some difficulty in maintaining the character and style of the original work, full success has been secured in rendering it a complete manual of the technique of minor surgery under modern conditions, and an excellent guide

[4] *The Operative Treatment of Chronic Constipation.* By W. Arbuthnot Lane, M.S., F.R.C.S. New edition. London: J. Nisbet and Co., Limited. (Demy 4to, pp. 70. 2s. 6d.)

[5] *Manual of Operative Surgery.* By J. F. Binnie, A.M., C.M.Aberd., Professor of Surgery, Kansas State University. Vol. i, Operations on the Head, Neck, Nerves, Trunk, Genito-Urinary System. Fourth edition. London: H. K. Lewis. 1909. (Post 8vo, pp. 843, illustrations 713. 14s.)

[6] *Lehrbuch der Chirurgie in Vorlesungen.* I Teil. *Allgemeine Chirurgie in 50 Vorlesungen.* Von Professor Dr. E. Leser. Second edition. Jena: G. Fischer. 1908. (Sup. roy. 8vo, pp. 804; 230 figures. M.18.)

[7] *Pye's Surgical Handicraft: a Manual of Surgical Manipulations, Minor Surgery, and Other Matter Connected with the Work of House-Surgeons and Surgical Dressers.* Fifth edition. Revised and largely rewritten by W. H. Clayton-Greene, B.A., M.B., B.C.Cantab., F.R.C.S. Eng., Surgeon in Charge of Out-patients, St. Mary's Hospital. Bristol: John Wright and Sons, Ltd.; and London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1909. (Demy 8vo, pp. 592; 343 illustrations. 12s. 6d.)

for junior practitioners. The new volume is handy and attractive, and is well illustrated, but it might, we suggest, have been improved by the omission of many details of surgical treatment that have in the course of a quarter of a century become obsolete.

In preparing the fourteenth edition of the work well known for nearly half a century as Heath's *Manual of Minor Surgery and Bandaging*,[8] Mr. BILTON POLLARD has made it his endeavour throughout the new volume to elucidate the system of aseptic surgery, and to teach the practical details which are so essential for its successful employment. A glance at the plate facing the title-page of this recent issue will suffice to convince those who have long since ceased to be students in surgery that there is very little association between the last and the early editions of this book. In one all-important respect, however, the manual in its new form maintains its distinctive characters of thoroughness and utility, and may still be commended as being, under the much altered conditions of modern practice, an excellent guide to minor surgery.

MINING PRACTICE IN GERMANY.

DR. JANNES, in giving an account of his twenty-five years' experience as a medical practitioner to the miners' society at Eschweiler,[9] speaks of the friendly and confidential relations which have existed between the miners and their doctor, and thinks that the system of the miner being able to choose his doctor freely, has contributed to this excellent result.

The progress of medical science during these years is noted, the development of antiseptics and asepsis, Roentgen rays, and the application of these to the injuries of miners.

The laws of assurance against accident and invalidity are mentioned with approval, but it appears that, in this connexion, the task of unmasking the simulator has not always been an easy one. Dr. Jannes believes that a knowledge of the science of psychiatry is a useful accomplishment to a medical man engaged in the examination of cases of traumatic neuroses, etc.

He speaks with satisfaction of the development of hygiene as applied to mines and miners, the improved air supply to workings, the value of first aid, and the use of oxygen in emergencies, and the importance of rapid transit by the ambulance to the hospital. The hospital at Eschweiler is well equipped for its purpose, having a Roentgen installation and a modern operating theatre, hot air baths, etc. The hospital is administered by the Sisters of the Order of St. Francis. The doctors of the district look after their own patients, and operate with the assistance of their colleagues, but in difficult cases specialists are called in. The number of cases of the various diseases and injuries treated is shown in a table.

DENTAL ANATOMY AND SURGERY.

DR. J. S. MARSHALL'S *Principles and Practice of Operative Dentistry*[10] is a very good book, in which the writer has, to an extent which we are sorry to have to say is unusual in American dental works, sought also to embody the opinions of writers of other nationalities, and has succeeded in offering an excellent summary of modern views, while at the same time the student is not left without guidance in a sea of more or less contradictory dicta. It may be doubted whether it was advisable to endeavour to incorporate in one work both dental surgery and dental anatomy, for each subject to receive full treatment would have required the whole space available, and we believe that we offered the same criticism upon a previous edition. But the book is so well done that it seems almost captious to raise this objection, and the book will be found useful for reference by the most advanced student of dental anatomy or dental surgery, as well as serving as a good textbook for the young student during his curriculum.

The author of *Golden Rules of Dental Surgery*[11] has very successfully followed the proper lines for a book that is to be a member of a series such as that to which it belongs. It is not an examination cram-book in any sense, but a set of dicta laid down by a practitioner of experience, many of them relating to little practical details such as a young practitioner is likely to overlook or disregard. The sections relating to anaesthesia, both local and general, are particularly good.

It is stated that these *Notes on Dental Anatomy*[12] are intended to be read over by the student after each lecture; but we very much question whether the possession of them may not tempt him to omit to take notes for himself—a proceeding much more valuable to him, even though his notes be far less complete than those here offered to him ready made. They are well done, concise, and generally correct, but they appear to be almost wholly derived from a very well known textbook. Sometimes the very words of this textbook are used, sometimes the words with slight alteration, the sequence of exposition being retained, and sometimes its substance differently arranged; occasionally something is added from other sources. But the use made of the particular book is so obvious and so copious that it ought to have been fully acknowledged.

In his work as dental tutor at Guy's Hospital the writer of *Dental Surgery Notes*[13] claims that he has felt the need of some abbreviated conspectus of dental surgery, and offers this explanation for proffering a book which lies open to the criticism that it is a "cram-book." It is very possible that such books may have their use in helping lame students over the stile of an examination, but we do not think them calculated to enable the student to acquire a sound and lasting knowledge of a subject, and should hesitate to put them into the hands of students. Still, if such books are to be written, this is as good of its kind as can well be. It is accurate, up to date, and well arranged.

Our Teeth is a book addressed to the public rather than to the profession,[14] and is an endeavour to bring home to educated people the necessity for due attention to the teeth as a means of improving the health of the community, in which direction considerable steps have already been taken by the treatment of the teeth of recruits and, in some places, of school children. The work, incidentally, deals to some extent with proper feeding, and gives simple directions for the hygiene of the mouth. Unlike many popular works its teaching is perfectly sound, it is well written, and well illustrated, partly by photomicrographs and partly diagrammatically. Perhaps in their desire to render it scientifically correct the writers have gone farther into questions of structure and development than the lay reader can, or will, follow them, but with this exception we have no criticism to offer on the conception and execution of the task the authors have set themselves.

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[8] *A Manual of Minor Surgery and Bandaging* (Heath). Fourteenth edition. By Bilton Pollard, F.R.C.S., Surgeon to University College Hospital and Professor of Clinical Surgery. London: J. and A. Churchill. 1909. (Crown 8vo, pp. 506; 250 illustrations. 7s. 6d.)

[9] *Fünfundzwanzig Jahre knappschaftsärztlicher Praxis beim Eschweiler Bergwerks-Verein* (1884–1909). Von Dr. Jannes. Munich: J. F. Lehmann. 1909. (Roy. 8vo, pp. 70. Abbildungen 22. M. 2.)

[10] *Principles and Practice of Operative Dentistry*. By John Sayre Marshall, M.D., Dental Surgeon United States Army, President Dental Examining Board (Army). Third edition. Philadelphia and London: J. B. Lippincott and Co. 1909. (Roy. 8vo, pp. 680. 21s.)

[11] *Golden Rules of Dental Surgery*. By C. W. Glassington, M.R.C.S., L.D.S. Golden Rules Series. Bristol: Wright; and London: Simpkin, Marshall, and Co. (Demy 32mo, pp. 72. 1s.)

[12] *Notes on Dental Anatomy*. By G. A. Peake, M.R.C.S., L.D.S. London: Ash, Sons, and Co. 1908. (Roy. 8vo, pp. 112.)

[13] *Dental Surgery Notes*. By E. B. Dowsett, L.R.C.P., M.R.C.S., L.D.S. London: Dental Manufacturing Company. (Fcap. 8vo, pp. 158. 3s.)

[14] *Our Teeth, How built up, How destroyed, How preserved*. By R. Denison Pedley, F.R.C.S.Ed., L.D.S., and Frank Harrison, M.R.C.S., L.D.S. London: Blackie and Son. 1908. (Med. 8vo, pp. 100, 26 figures. 5s.)

HANDBOOKS FOR MIDWIVES.

MRS. SCHARLIEB, in her preface, claims for Dr. VICTORIA BENNETT that she has "successfully translated scientific truth into homely language"; and with this we agree. The *Lectures to Practising Midwives*[15] explain in clear and simple words the things that a midwife ought to know. Dr. Bennett accepts most loyally and trustfully what other people have taught before her. Thus, as causes of uterine inertia she gives "malnutrition, constitutional weakness"—terms often used, but so vague as to be meaningless. We know nothing as to the cause or causes of uterine inertia; and this is recognized by the precept contained in nearly all practical midwifery books, not to predict when the child will be born. *Post-partum* haemorrhage is said to be caused by "excitement, worry, or alcohol drinking"; but we know of no evidence that alcohol drinking has any relation to the amount of blood lost *post partum*. Among the causes of septicaemia, according to Dr. Bennett, is "a general predisposition." Those who are old enough to remember hospital practice before Lord Lister's teaching was generally accepted know that there is no such thing as a predisposition to septicaemia. In the pre-Listerian age the strongest and healthiest patients succumbed after operations as frequently as those whose health in other respects was precarious. The predisposition theory was invented to shield the practitioner whose patient died from septicaemia because he had not taken adequate antiseptic precautions. We are rather inclined to cavil at giving the midwife the choice between three proprietary antiseptics of unknown composition, while the cheapest of antiseptics, sublimate, is also one of the most powerful as it is the most portable. True it is poisonous, but so are many others, and a midwife who is competent to attend labour ought to know how to avoid poisoning her patient. May we also say that we think that the daily bath and other things would be less insisted on if the persons who talk about it had to build their own fires, boil their own water, fill and empty the bath themselves, wash and dry their own linen? The illustrations are not all equally good—for example, Fig. 20 on page 129 might be replaced by a better one. Taken altogether, we consider this book one of the very best that a midwife can study.

We noticed the first edition of Dr. COMYNS BERKELEY'S *Handbook for Midwives and Maternity Nurses*[16] in our issue for January 12th, 1907, and the fact that a new edition has been called for is evidence that its merits have been appreciated. The author tells us in his preface that he has endeavoured to take advantage of the friendly criticisms passed upon his work when first published: a sensible attitude not always taken by irritable authors. The appendices which have been added are three: (*a*) On cancer of the uterus, written to help the midwife to urge early examination and, if necessary, operation on persons suffering from symptoms suggestive of that disease; (*b*) questions and answers founded on the rules of the Central Midwives Board; (*c*) obstetric rules of the City of London Lying-in Hospital, of which we notice Dr. Berkeley is the senior physician. These rules conclude with the following note: "If, after sterilization, the hands accidentally touch any object which has not been sterilized, the whole process of disinfection must be repeated." This note implies that sterilization and disinfection are the same thing. In our judgement, while sterilization implies disinfection, disinfection does not imply sterilization. Disinfection of the hands has been abundantly shown to be practicable; but there is doubt whether sterilization of the hands is possible. The practical tendency of the note is good, but we think it is well to use words with as close literal accuracy as possible.

[15] *Lectures to Practising Midwives.* By Victoria E. M. Bennett, M.B., B.S.Lond., Lecturer to Midwives for the London County Council, etc. With preface by Mrs. Mary Scharlieb, M.D., M.S.Lond. London: Baillière, Tindall, and Cox. 1909. (Demy 8vo, pp. 270; 41 illustrations. 4s.)

[16] *A Handbook for Midwives and Maternity Nurses.* By Comyns Berkeley, B.A., M.B., B.C.Cantab., F.R.C.P.Lond., Obstetric Physician to the Middlesex Hospital, etc. With 58 illustrations. New and enlarged edition, with appendices. London: Cassell and Co. 1909 (Fcap. 8vo, pp. 315. 5s.)

NOTES ON BOOKS.

MR. ROBSON'S little book on *Social Disease and its Prevention*[17] is avowedly not intended to be regarded as a medical work, but as one "to be read by all and sundry." This being the case, it would have been well to have avoided the use of purely technical terms, such as *Spirochaeta pallida*, neuron, and numerous others, which the author habitually employs. With the best intentions on his part, the use of such terms in a work of the sort lays him open to the imputation of parading professional knowledge before the lay public. A large part of the work is occupied with commentaries from Hutchinson's *Syphilis*, and the opinions of many living authorities are freely quoted in the text. We cannot agree with the author that in Great Britain the medical profession "have failed to realize the importance of contagious disease, as regards its effects upon the happiness and welfare of domestic life, and also upon the physique and efficiency of the race." The statement, too, that syphilis is the "most common cause" of cerebral haemorrhage, "generally known to the public as apoplexy, a stroke, a fit, and so on," is only one of several the accuracy of which is doubtful. The main object of the work is the advocacy of prevention. For the prevention of syphilis the author advises the employment of a 33 per cent. calomel ointment, to be used as a lubricant, preferably before, or within eighteen hours after, the exposure to infection. A similar ointment, or one of mercuro-zinc-cyanide, introduced into the orifice of the urethra, is advised for the prevention of gonorrhoea, along with injections of protargol or potassium permanganate. We have sufficiently indicated the scope of the work, and do not feel called upon to express an opinion as to whether any advantage is to be expected from a publication of this nature.

[17] *Social Disease and its Prevention.* By H. N. Robson, M.R.C.S. L.R.C.P. London: Appleton and Co. (Cr. 8vo, pp. 104. 2s. 6d.)

INTERNATIONAL CONGRESS ON ALCOHOLISM.

(*Continued from page 319.*)

Alcohol and the Race.

As a result of a long-continued investigation, Professor TAAV. LAITINEN, of the Helsingfors Hygienic Institute, said he had arrived at the conclusion that alcohol, although consumed in small quantities, had an injurious effect on human offspring.

Dr. KARL KÖGLER, of Vienna, said 17 per cent. of tuberculous children were the offspring of alcoholic parents, and his experience as a nerve specialist convinced him that a similar percentage of nervous diseases was directly traceable to indulgence in strong drink.

Alcoholism and Tuberculosis.

Professor S. E. HENSCHEN (Stockholm) read a paper in which he said the use of alcohol led to poverty and overcrowding, and mortality in tuberculosis rose with the congestion of population. Alcoholism, therefore, must be combated as a potent cause of the poverty and misery which indirectly produced tuberculosis.

Liquor Traffic in Africa.

Dr. C. F. HARFORD (London) reminded the meeting that a far-seeing statesman like Mr. Joseph Chamberlain had, when Colonial Secretary, made a very clear pronouncement on the question of the liquor traffic. He proposed that the Congress dispatch the following telegram to Mr. Chamberlain:

> This meeting of the Twelfth International Congress on Alcoholism, composed of members of divers nationalities and political opinions, recalls the noble words and earnest efforts which you have put forth to protect the native races of Africa from the liquor traffic, which, as you have said, is not only discreditable but disastrous to British trade. We appeal to you once more to support us in our united endeavours to protect the weak races of the world from this gigantic evil.

The resolution was unanimously carried amid applause.

Economic Effects of Production and Consumption of Alcohol.

On July 22nd Sir THOMAS WHITTAKER, M.P., delivered an address in which he said the total expenditure on alcohol in this country was £165,000,000 a year, and the test of the wisdom and the value of that expenditure must

be looked for from the point of view of the consumer and not from that of the producer or the revenue. The real tests of the wisdom and value of this expenditure were: (1) Were these liquors beneficial, or were they actively injurious? and (2) could the consumer afford the expenditure? Abstainers lived longer, were healthier, and discharged the duties of citizenship quite as well as non-abstainers. He doubted whether in individual cases the use of alcohol was innocent and innocuous, but he was certain that communities as a whole could not take it without hurt. Insurance statistics showed this fact conclusively. A company with which he was connected, and which had for a period of more than sixty years kept accurate statistics of the comparative mortality of abstainers and non-abstainers, found that each year the death-rate among the former had been markedly less than among the latter. The non-abstainers, furthermore, were very carefully selected, so that the average mortality among them was slightly less than the average mortality among the great majority of other insurance offices in the country. The difference amounted to something ranging from 25 to 30 per cent. per annum. Of 100,000 men of 30 years of age in the temperance section 55,000 would reach the age of 70; while of the same number at the same age in the non-abstaining section only 44,000 would reach 70. The very civilization of which we were so proud, the very progress that we were making involved and begot greater needs and a higher standard for our people. In his judgement the problems of employment were very largely problems of capacity in its widest sense, and nothing created incapacity like drinking. The results of the drinking habits were seen in the deprivation of the children of proper training and even a proper supply of food. People spoke of improved housing, but did they realize that those who lived in these houses generally spent more on liquor than on rent? Drink was the dominant factor in crime, pauperism, and disease.

Alcoholism and Workmen's Insurance.

A paper was read by Herr KARL KÖGLER (Vienna) on Alcoholism and Workmen's Insurance. He contended that alcohol led to a degeneration of the whole race, and thereby to a general increase of the risks for every class of workmen's insurance. The statistical investigation of the influence of alcoholism in regard to the frequency of illness, the number of accidents, and incapacity was still in its infancy. Notwithstanding, experience showed that alcohol was harmful to workmen's insurance.

The Effects of Alcohol on the Nervous System.

Dr. F. W. MOTT read a paper on the nervous system as exhibited in hospital and asylum practice. He referred to (1) the transient effects of the abuse of alcohol on the stable healthy nervous system; (2) the permanent effects of the continued abuse of alcohol on the stable healthy nervous system—(*a*) the subtle, unrecognizable changes which constituted a vicious habit, (*b*) the structural recognizable changes in the brain, spinal cord and nerves found in certain cases of chronic alcoholism, occurring especially in women. These changes might be correlated with a characteristic complex of symptoms known as polyneuritic psychosis. The tendency of these cases was to get well, and all the symptoms eventually to disappear under the influence of proper treatment and withdrawal of alcohol. In such, therefore, there could not be widespread permanent destruction of the nervous elements. The fatal termination in this disease might be due (*a*) to intercurrent complications—for example, pneumonia, bronchopneumonia, tuberculosis, septic infections, etc. Occasionally death might occur from heart failure or cerebral haemorrhage. These uncomplicated cases were infrequent, but obviously were the most useful for studying the effects of the alcohol *per se* on the nervous system. However, similar changes might be observed in chronic arsenic and lead poisoning; consequently, they did not know whether the changes found in the nervous tissues were due to the direct influence of the alcohol or to the effects produced by the derangement of various organs of the body and the production of autointoxication. The cases were sufficiently numerous to allow them to definitely associate the lesions with the alcoholic poisoning. Dr. Mott gave a description of an uncomplicated acute fatal case of alcoholic neuritis and psychosis with degeneration of the vagus nerves, fatty degeneration of the heart, and multiple cerebral haemorrhages; the description was illustrated by lantern slides. The literature of the subject and his own experience showed that alcoholic neuritis was due to a segmental and not a Wallerian degeneration of the peripheral nerves. In most of the recorded cases and in all his own cases changes in the spinal sensory and in the spinal motor nerve cells were found. Similar changes were also found in the ganglion cells of the cranial nerve nuclei. These cell changes might be accounted for in more than one way: (*a*) By a toxic action on the whole neurone; (*b*) a secondary reaction to the changes in the peripheral nerves; (*c*) a combination of both these causes. The last named was the more probable. He described the changes in the spinal motor and spinal sensory cells and the peripheral nerves. Speaking of the changes in the brain, he said that in chronic cases met with in asylums, where the dementia had become permanent they found thickening of the soft membranes, atrophy of the superficial cells and fibres of the cerebral cortex.

(*a*) Microscopic changes in the cortical cells: The most notable change was in the large psychomotor Betz cells; the changes were similar to those in the spinal motor cells.

(*b*) Changes in the cortical fibres: These were not always present, but they were found in cases of permanent dementia. They consisted mainly of a disappearance of the myelin staining of the tangential and superradial fibres. Neuroglia proliferation was not marked, and might even be absent. There was, in his opinion, not sufficient evidence to show correlation between the mental symptoms of the disease as manifested in its intense form and the morbid changes found in the brain. This part of the paper was also illustrated by lantern slides.

The mental picture corresponded more with the toxic psychosis than with organic brain disease.

Alcoholism and Crime.

Lieutenant-Colonel A. B. MCHARDY (Edinburgh), dealing more particularly with the criminal statistics of Scotland, said last year there were 90,000 cases of public disorder due directly to the influence of drink. Out of 153 cases of murder, culpable homicide, etc., it was found that no fewer than 129 of the culprits had been "generally, directly, and immediately" under the influence of liquor. The chief constable of a large city recently reported that of the persons apprehended in one month, 70 per cent. owed their downfall to drink. These facts justified him in stigmatizing drink as "a crime producer."

The Detention of Inebriates.

Professor G. ASCHAFFENBURG (Cologne) recommended a number of legal measures, the chief being that if a drinker had committed some breach of the law, and if it had been ascertained by medical opinion that the accused was a habitual drinker, the law must sentence the man to be interned in an inebriate home. If the drinker showed himself to be incurable he should be sentenced to perpetual custody in an asylum.

Dr. R. WELSH BRANTHWAITE, representing the Home Office, said that every inebriate was either a potential criminal, a burden upon public funds, a danger to himself and others, or a cause of distress, terror, scandal, or nuisance to his family and those with whom he associated. Every inebriate, moreover, by precept, example, neglect of children, and possibly by direct procreation of his species, was contributing to the supply, reproducing his like to the detriment of national welfare in years to come. Interference with the liberty of the inebriate was, therefore, justified, and, to carry this out, legislation, amply protected against misapplication, was needed. Any law for inebriates must be elastic enough to permit the application of the mildest possible measures, and, at the same time, of stronger powers when the milder had proved ineffectual. Our existing Inebriate Acts were defective in these attributes, but there was reason to expect extensive changes in the near future. For the benefit of drunkards who had not become criminals the English Committee suggested as a preliminary measure an officially witnessed pledge to abstain from alcoholic liquors; on failure to keep this pledge the inebriate might be enabled to place himself under the care of a guardian or in a licensed retreat; failure of these measures to be met by the power to

enable certain friends of the inebriate to apply for a compulsory order of guardianship or committal to a retreat.

Lord WEARDALE referred to the prospect of further legislation for the control of inebriates, and suggested that the proposal of compulsory detention and guardianship raised a larger question—whether the useful precedent set by France and Holland in the "family council" could not be applied in this country, in cases not only of intemperance but of other forms of extravagance.

Next Meeting.

It was decided that the next meeting of the Congress should be held at The Hague in 1911.

BRITISH MEDICAL BENEVOLENT FUND.

AT the July meeting 22 cases were considered, and grants amounting to £195 voted to 19 of the applicants, 3 cases being passed over. Four annuitants were elected to fill vacancies caused by deaths. Appended is an abstract of the cases relieved by grants.

1. Daughter, aged 70, of late M.R.C.S. No income; has been supported for several years past by a brother who is now compelled to withdraw his help. Relieved once, £10. Voted, £18.

2. M.B., C.M.(Glasgow), aged 56. Is not in very good health, and finds difficulty in obtaining suitable work. No children. Voted £5.

3. Daughter, aged 73, of late M.R.C.S., who practised as an army surgeon. Lost everything through the dishonesty of the family solicitor (since struck off the rolls), and has exhausted a small legacy received a few years ago. Voted £18.

4. Widow, aged 58, of M.R.C.S., L.S.A. Supports herself by letting lodgings, but is in arrears with rent owing to last year's bad season, and is now threatened with loss of her furniture. Voted £16.

5. Widow, aged 71, of M.R.C.S. Only income the Old Age Pension of 5s. a week, and is crippled by rheumatism and sciatica. Voted £12.

6. Widow, aged 43, of M.R.C.S., L.R.C.P. Quite unprovided for at husband's death in January last, and dependent on relations who can ill afford to help. Two children, aged 9 and 7, both candidates for institutions. Voted £10.

7. Daughter, aged 58, of late L.S.A. No income; lets lodgings, but finds the profits insufficient for her support. Relieved once, £12. Voted £12.

8. Widow, aged 52, of L.R.C.P. No income; is in ill-health and unable to follow any active employment. Only child barely self-supporting. Relieved twice. £24. Voted £12.

9. Widow, aged 40, of L.R.C.P.Edin. Supplements a small income by district nursing, but has incurred unusually heavy expenses through the illness of one of her children. Relieved twice, £10. Voted £5.

10. Widow, aged 63, of L.R.C.P.Edin. Has an annuity of £20 and earns a few shillings a week by addressing envelopes and needlework. Two sons, but neither able to help. Relieved twelve times, £126. Voted £5.

11. Daughter, aged 28, of late M.D.Dublin. Has never had good health, and at present is quite unable to follow any employment and dependent on mother whose income is less than £1 a week. Relieved four times, £25. Voted £5.

12. Widow, aged 48, of L.R.C.S.Edin. Income £16 a year, and receives assistance from her mother. Children unable to help. Relieved five times, £50. Voted £5.

13. Widow, aged 40, of M.R.C.S., L.R.C.P. Has supported herself as a working housekeeper, but is losing her post through the breaking up of the home. Two children, aged 18 and 14, the younger in bad health following influenza. Relieved five times, £35. Voted £10.

14. Widow, aged 48, of L.R.C.P., L.R C.S.Edin. No income, and children only able to give very slight help. Relieved thirteen times, £141. Voted £5.

15. M.D.Lond., aged 67. Is quite incapacitated by hemiplegia, and dependent on friends who can ill afford to help. Relieved once, £18. Voted £18.

16. L.S.A., aged 63. Only income an Epsom College pension, and suffers from a nervous complaint which quite prevents practice. Children unable to help and wife dying from new growth. Relieved three times, £54. Voted £10.

17. Daughter, aged 63, of late M.D. Only income a few shillings a week, and has been obliged to give up post as companion on account of ill-health. Relieved twice, £24. Voted £12.

18. Widow, aged 73, of M.D.Glas. Lets lodgings, but has had one set of rooms vacant for six months. Children unable to help. Relieved six times, £31. Voted £5.

19. Daughter, aged 63, of late L.S.A. Only income a small annuity, and has to support an invalid sister who is entirely without means. Relieved eleven times, £103. Voted £12.

Contributions may be sent to the Treasurer, Dr. S. West, 15, Wimpole Street, W.

THE QUINCENTENARY OF LEIPZIG UNIVERSITY.

LEIPZIG is not a city richly endowed either with natural advantages or with those elements of artificial splendour that belong to some of its rivals, but perhaps it is the most representative city of any in the German Empire. Above all a commercial city, the seat of the book trade and of many other industries, its geographical position between the cities of Northern Italy and those of North Germany, and between the East and West, made it from time immemorial a great mart of international trade. It is not only the seat of one of the greatest of the universities of the world—a university great in achievements both literary and scientific, the home of music, the university of Leibnitz and Goethe. It owes its foundation neither to Pope nor King; its foundation depended on its magisters and its students, who five hundred years ago left the banks of the Moldau to settle on the great plain watered by the Pleisse, Parthe, and the Elster. Many hundreds of students and masters, representatives of the three great German "nations," left Prague in 1409 rather than submit to the domination of the fourth or "Czechisch" nation, to seek a new home and conserve their academic "Freiheit." Friedrich "der streitbare"—Fredericus bellicosus—became the protector of these wandering students, and under his fostering care and influence, and partly by means of his endowments, they found a home, which they and other successors have made one of the greatest seats of learning in the world. No wonder, therefore, that the King of Saxony, the good citizens of Leipzig, and representatives of learning from all quarters of the globe, met in Leipzig towards the end of July to celebrate fitly the five hundredth "Jubilaeum" of the university. The city itself has advanced and changed probably more than any other German town during the last forty years. In 1830 the number of inhabitants was 150,000; to-day it is nearly 600,000, and the number of matriculated students is over 5,000.

The Augustus Platz was the centre of the festivities, and the Augusteum — the Universitas litterarum — recently reconstructed at a cost of nearly M. 4.000,000, was the centre of some of the chief functions of the quincentenary, which began on Thursday, July 29th, at 9 a.m., with divine service in the university church. The King, Friedrich August, and his suite arrived early, and all through the festivities His Majesty participated from start to finish in every event. The great event of the day, the "*Festact*," in the new theatre, presented a brilliant scene, when delegates and representatives of universities and learned bodies or societies brought their tributes of congratulation or presented gifts to the university. A speech by the King, as "Rector magnicentenimus," and a discourse by the rector, Dr. Binding, were followed by presentation of the addresses. The previous evening delegates met in the university and chose representatives as spokesmen for the morrow. Professor Mahaffy was chosen to present the delegates of Great Britain and the Colonies. He spoke first in English and then in German, and won the hearty and spontaneous applause of the whole audience. The music of Weber, presentation of addresses, speeches, responses, and what not lasted until between 2 and 3 in the afternoon. Naturally, the University of Prague took first place, and its rector brought both greetings and something more tangible. There were 6 Swiss universities represented, 20 West European, 14 East and North European, 18 from Great Britain and the Colonies, and the same number from the United States and adjoining countries, and endless representatives of societies.

This function over, and after a short period of rest, the call came to dine in the Palmen Garten, where about 1,000 guests met at the invitation of the Saxon Government. After the dinner an evening garden party, to which several thousands were invited. Unfortunately, rain fell, but nevertheless fireworks and universal gaiety kept folks in the gardens until late.

On Friday there was a gathering in the Wandelhalle of the university, the event of this day being the speech of the veteran, Professor W. Wundt, who, in spite of his 77 years, spoke with ease and charm for just over one hour. Then followed the "promotions" to honorary degrees by the Deans of the four Faculties. The names of the new Doctors were read out, 15 in the Faculty of

Theology, 20 in Law, 18 in Medicine, and 33 in that of Philosophy. No English, Scottish, or Irish names occurred in the medical list, and only 1 American. After this took place the "*Festzug*," or procession of students, an immense cavalcade or pageant, representing the whole history of Leipzig University from the exodus from Prague to latter day events.

Then followed a concert and plays. But events were not at an end. The students, old and young, reigned supreme, and the call was for a "kommers" at 9 p.m., under the presidency of His Majesty the King in a "Fest Halle" specially constructed for the occasion, and capable of holding 10,000 people. Quite that number assembled for this great, imposing, and characteristic event. The students were in gala costumes. There was music, vocal and instrumental, and beer galore. Of beer some 188 hectolitres was consumed, which gave the modest computation of six glasses per head of the guests. This was the end of the general festivities.

On Saturday, His Majesty the King invited about 400 guests to dine at his palace at Meissen.

PREVENTABLE BLINDNESS.

THE Committee on Preventable Blindness appointed at the International Conference on the Blind, held at Manchester in July, 1908, has presented its report. It states that recent English literature has been summarized in the report of the British Medical Association Committee.[1] The gist of these papers is to the effect:

1. That more than one-third of the blindness found in British blind schools is due to this one cause—infants born with good eyes are blinded by the disease within a few days of their birth.
2. The risk of blindness is entirely preventable by prompt and efficient treatment.

To this end it is now almost universally agreed, by both medical men and laymen cognizant with the subject, that the disease known as "The Ophthalmia of the Newborn" should be scheduled as compulsorily notifiable. And it is believed that by such action this appalling source of misery and helplessness would be checked. In spite, however, of these urgent recommendations, no action has been taken by the British public health authorities, nor have these authorities, so far, availed themselves of their permissive powers to make the disease compulsorily notifiable.

At the International Conference on the Blind, held in Manchester in July, 1908, it was held that no sufficient steps had been taken to give publicity to the urgency of the matter. A representative committee was therefore appointed to consider the subject fully, and to make such recommendations as they might deem, not only advisable, but as likely to be of practical utility. At the first meeting of this Committee two ophthalmic surgeons were co-opted as members of, and advisers to, the Committee:—Mr. Robert N. Hartley (Honorary Surgeon, Leeds United Institution for the Blind and Deaf and Dumb), and Mr. N. Bishop Harman (Oculist to the London County Council Blind Schools). These gentlemen were expected to advise on matters relating to the North and South of England respectively. During the sittings of this Committee, another committee, instituted by the British Medical Association, has had this same matter under review. The two committees have acted upon quite independent lines, and the fact that they arrived at similar conclusions and make virtually the same recommendations adds greatly to the weight of their recommendations.

The following are the recommendations of the Committee appointed by the International Conference:

1. That in the opinion of this Committee the adoption by the public health authorities of the Early Notification of Births Act is urgent.
2. That in the opinion of this Committee the disease known as the "ophthalmia of the newborn" should be added to list of diseases compulsorily notifiable under the powers of the Infectious Diseases (Notification) Act of 1889.
3. That in the opinion of this Committee—
   (*a*) More definite teaching should be given to midwives on the seriousness of eye disease in children; and
   (*b*) They suggest that the Central Midwives Board should issue more stringent instructions on the danger of "whites" in lying-in women.

With a view to obtaining more exact knowledge of the incidence of "blindness" in subsequent census returns the Committee recommends that the Registrar-General should be requested to define and classify "blindness" in his schedules in some such way as the following:

1. Stone Blind—that is, the individual has no power to see the movement of fingers before the eyes.
2. Partially Blind—that is, in the case of:
   i. *Children*. Those who have not sufficient sight (even with the aid of glasses) to be taught in an ordinary school.
   ii. *Adults*. Those who have not sufficient sight (even with the aid of glasses) to earn a living by ordinary means.

In conclusion, the Committee emphasizes the fact that the question is at the present juncture, and is likely to be in the future, of much greater importance than in the past. For the introduction and extension of the operation of the Employers' Liability Act is seriously affecting, and is likely still more seriously to affect, the earning powers of adult workers with defective vision.

[1] BRITISH MEDICAL JOURNAL, May 8th, 1909.

MEDICINAL AND DIETETIC ARTICLES.

Dried and Powdered Milk.

WE have received for examination a sample of the dried and powdered milk supplied under the name "Trumilk," by Casein, Ltd. (Battersea, London, S.W.). It is in the form of a fine white powder; the directions are to mix the powder thoroughly with cold water, and trials showed that this reproduced the original milk with remarkable success. It is quite free from the "cooked" flavour of many powdered milks, and it would be difficult or impossible to distinguish from fresh milk the milk obtained on mixing it with water. For one quart of water it is directed to use 2½ times as much of the powder as will fill the lid of the tin in which it is supplied; this quantity was found to weigh 3½ oz., and the milk so prepared is weaker than undiluted fresh milk, so that if the equivalent of full milk is desired it would be necessary to use rather more of the powder than the amount stated. The composition of the powder, as shown by our analysis, and of the directed dilution calculated from those figures, are here given:

	Powder.	Liquid.
	Per Cent.	Per Cent.
Fat	26.9	2.17
Protein	27.8	2.24
Mineral matter	5.9	0.48
Lactose, by difference ...	37.4	3.02
Water	2.0	92.09

It is stated that the powder is sterilized, and it appears to mark a distinct advance in preparing milk in such a form.

MEDICAL AND SURGICAL APPLIANCES.

A Massage Vibrator.

THE "Arnold" electrical vibrator for massage purposes, which appears to have a large constituency in the United States, is being produced in this country by the General Electric Co. (Limited), 71, Queen Victoria Street, E.C. Opinions will differ as to the value of vibratory massage delivered by small, portable instruments, and unfortunately this field has been exploited by charlatans. The use of massage in stimulating the action of the tissues, however, is generally recognized, and inasmuch as the little apparatus in question only gives massage proper—that is to say, continuous motion externally applied—and not a succession of electrical shocks, there is no reason why, under competent advice, it should not answer some at least of the purposes of hand massage, while its convenience and the rapidity of its vibrations are advantages. The instrument has a tiny electric motor which causes an arm to vibrate, and the motion is communicated to adaptors of various forms for application to different parts. The apparatus can be used with direct or alternating current circuits, or, when these are not available, with dry batteries supplied for the purpose. The effect of the vibrations is certainly pleasant and refreshing. It is of course necessary that the limitations of such an instrument should be borne in mind, and it is also essential to insist that when localized vibratory massage is employed as a means of treatment in rheumatic or any other affections, it must only be applied under the original advice and instructions of a qualified medical practitioner. We are glad to know that the manufacturers make that stipulation.

THE ROYAL COMMISSION ON WHISKY AND OTHER POTABLE SPIRITS.

In February, 1908, a Royal Commission was appointed to inquire whether in the general interest of the consumer or in the interests of the public health, or otherwise, it was desirable—

(*a*) To place restrictions upon the materials or the processes which may be used in the manufacture or preparation of whisky in the United Kingdom;
(*b*) To require declarations to be made as to the materials, processes of manufacture or preparation, or age of any such spirit;
(*c*) To require a minimum period during which any such spirit should be matured in bond; and
(*d*) To extend any requirements of the kind mentioned to any such spirit imported into the United Kingdom,

and to make similar inquiry with regard to other kinds of potable spirits manufactured in or imported into the United Kingdom.

Whisky.

In June, 1908, the Commission issued a preliminary report which contained the following conclusions:

1. That no restrictions should be placed upon the processes of, or apparatus used in, the distillation of any spirit to which the term "whisky" may be applied as a trade description.
2. That the term "whisky" having been recognized in the past as applicable to a potable spirit manufactured from (1) malt, or (2) malt and unmalted barley or other cereals, the application of the term "whisky" should not be denied to the product manufactured from such materials.

The consideration of the question of the advisability of attaching special significance to particular designations such as Scotch whisky, Irish whisky, grain whisky, and malt whisky, and of restricting or requiring the use of such designation was postponed. These subjects, together with many general matters connected with the manufacture and sale of whisky and other spirits, are discussed in the Final Report of the Commission issued on August 9th.

The report quotes the general conclusion of the Select Committee of the House of Commons on British and foreign spirits which sat in 1890–1891 under the presidency of Sir Lyon Playfair. This committee recommended that increased restrictions should not be placed on blending spirits, that compulsory bonding was not necessary, that a limit of age should not be fixed, and that no provisions as regards adulteration were required beyond those already available.

Historical.

Although evidence derived from various statutes proved that spirit was distilled from grain in Scotland as early as the sixteenth century, and that in the seventeenth century the method in use did not differ essentially from that practised in the pot-still distilleries of Scotland at the present day, the statutes showed also that aqua vitae was not the exclusive product of malted barley, but that other substances, such as unmalted grain, were also used in the early days of distillation in Scotland. The term "whisky" is not used in any of the statutes, and does not seem to have been employed until the latter part of the eighteenth century. After reviewing the evidence as to the materials used, the Commission expresses the opinion that, though the flavour obtained by the distillation of spirit from a mash of which maize is the principal constituent differs materially from the flavour obtained from a mash of malt or malt and unmalted barley, there is no valid reason for excluding the use of maize in the manufacture of whisky, since there is no evidence that maize is not a perfectly wholesome material.

Manufacture.

As to its mode of manufacture, the Commission states that the claim put forward that the pot-still product alone has the prescriptive right to be called whisky is based upon the fact that until about 1830 all whisky was manufactured in pot-stills, but it holds that a product does not lose its name because an improved, or even altered, mode of manufacture is employed.

The three processes in common use for the production of whisky—the Irish pot-still, the Scotch pot-still, and the patent-still process—have certain points in common, since each involves the following three operations: (1) Mashing for the preparation of a liquor technically termed "wort"; (2) fermentation of the wort for the preparation of a liquor called "wash"; (3) distillation of the wash for the separation of the spirit.

Mashing.—The materials used have been restricted in practice to malt, and to unmalted cereals, such as barley, maize, oats, rye, and wheat. In the manufacture of pot-still whisky in Scotland, barley malt is generally the only material used, but in Ireland it is usual to employ a mixture of barley malt and unmalted barley, oats, wheat, and rye, maize being generally excluded; four-fifths of the whole usually consists of barley, malted and unmalted. In the patent-still process the materials employed in the mash are much the same in both Scotland and Ireland. Malt, maize, barley, rye (malted and unmalted), and oats being used in varying proportions. In one Scotch distillery the mash was made up of 25 per cent. malt, 72 per cent. maize, and 3 per cent. oats; in another of 30 per cent. malt, 30 per cent. rye, and 40 per cent. maize. In one Irish distillery it consisted of 35 per cent. malt, and 65 per cent. of a mixture of barley and maize; in another, malted barley, rye and maize were used in the proportions of 28, 36, and 36 per cent. re spectively. The next stage is the same in all cases, the mixture is crushed and extracted with hot water, the starch of the grain being more or less converted into sugar by the diastase of the malt. Other substances are at the same time obtained in solution from which the secondary constituents of the finished whisky are both directly and indirectly derived. The exact nature of these substances is not yet thoroughly understood. Dr. Bell, from his investigations made for the Select Committee of 1891, concluded that some of the essential oils naturally existing in the malt and grain, and the pyro and creosotic bodies with which the malt becomes impregnated during the process of drying over peat, anthracite, or coke fires, pass through the operations in a more or less chemically unchanged condition, thus imparting distinctive characters to the whisky. This is especially the case when the usual forms of pot-stills are employed for the distillation. As already stated, the liquor resulting from the mashing process is technically termed "wort."

Fermentation.—The wort, cooled to a suitable temperature, is introduced into the fermenting vessels and yeast added. The yeast converts the sugar existing in the wort into ethylic alcohol, and under the combined influence of the yeast and the diastase left in the wort the whole of the products derived from the starch of the grain during the mashing process are ultimately fermented. At the same time certain other constituents of the wort undergo chemical change, giving rise to substances which influence the flavour of the finished whisky. Foremost among these substances are the higher alcohols, which have recently been shown by Ehrlich and others to owe their origin to the splitting up of certain nitrogenous substances (amino-acids) produced in the first place by the peptonizing action of the malt in the mashing process. The special nature of the yeast, the temperature at which it works, and the time occupied in fermentation are all factors which affect the ultimate result. The liquor resulting from the process of fermentation is technically termed "wash."

Distillation.—The wash is heated in a suitable vessel known as a still. The alcohol and secondary constituents pass over from the wash to a worm or cooling apparatus, are there condensed, and are finally received into another vessel. Originally, the report states, the object of distillation, as applied to potable spirits, was no doubt the separation of the more volatile constituents from the less volatile and non-volatile constituents of the wash. In the course of time, however, it came to be recognized that by modifying the form of still, by collecting the distillate in fractions and not as a whole, and by redistilling, the more valuable portions of the spirit could be obtained in a more concentrated form; and that, in addition, the quality of the whisky could be improved. Thus the distillation process not only involves the separation of the more volatile products of the wash, but the concentration and rectification of those bodies.

Scotch Pot-Still.—The simplest varieties of the pot-still are used in Scotland; usually they are heated by direct fire, though in some cases steam pipes and steam jackets are used. As to whether the one or the other method has an important effect upon the character of whisky opinions differ, some authorities holding and others denying that the open fire causes a charring of the organic substances

in the wash which has the effect of adding empyreumatic bodies to those already present in the wash. In Scotland two distillations are employed. The first distillate, called "low wines," contains all the alcohol and secondary constituents, together with some water. From the second distillation three fractions are obtained. The first is termed "foreshots," the second is the clean or finished whisky, the third is called "feints." The judgement and experience of the distiller determines the point at which the collection of foreshots is stopped and that of whisky commenced, and similarly that at which the latter is stopped, and the collection of feints begun. The strength at which the whisky fraction is run is of great importance to the character of the spirit; in Scotland it is generally from 11 to 25 degrees above proof. The foreshots and feints are mixed together and added to the low wines for the next distillation, the feints from the last distillation of the season being kept for adding to the low wines from the first distillation of the next season. In some distilleries in Scotland, especially those in the Lowlands, whisky is produced from three distillations, and the spirit is then run at 40 to 45 degrees over proof.

Irish Pot-Still.—The pot-stills employed in Ireland are generally much larger than in Scotland. Three distillations appear to be universally practised, and the whisky fraction is usually run at from 25 to 50 degrees over proof. Both in Ireland and in Scotland soap may be used to prevent frothing in the wash still, and charcoal in the low wines still for purifying purposes.

Patent-Still.—This still as used at the present day has two columns, called the rectifier and the analyser. Each column is subdivided horizontally into a number of wooden chambers with perforated copper floors In the process of manufacture both columns are filled with steam and the wash is pumped to near the top of the rectifier and traverses a pipe which goes to the bottom of the rectifier, passing each chamber twice. The wash, which at the base of the rectifier is almost at boiling point, passes through a continuation of the same pipe to the top of the analyser, where it is discharged on to the perforated plate forming the base of the top chamber. As the ascending steam in the analyser is under pressure the wash cannot pass through the small perforations, but fills the top chamber and then overflows through a small drop pipe on to the plate of the next lower chamber. As it traverses the analyser the wash is gradually deprived of its alcohol and other volatile constituents. The alcoholic vapours mixed with steam are then conducted to the rectifier, where they are cooled, with the result that the less volatile constituents condense and fall to the base of the rectifier and pass thence into the "hot feints "receiver. At a certain point in the rectifier a temperature prevails which roughly corresponds to the condensation temperature of strong ethylic alcohol, which is collected in a chamber on a non-perforated plate called "the spirit plate"; in practice, if the still be working properly, the pure spirit when once it has commenced to flow, runs continuously until the close of the distillation. At the beginning and end of the distillation when the spirit is not of sufficient strength it is allowed to pass into the feints receiver and pumped back into the still. The hot feints, consisting of a mixture of weak ethylic alcohol with an excess of fusel oil, are pumped continuously throughout the distillation to the analyser and there redistilled. Each distilling period occupies two or three days, and at its end the fusel oil can be removed from the hot feints receiver by adding water when the fusel oil rises to the surface, and may be skimmed off.

On examining a sample of fusel oil which he obtained from a patent-still distillery producing "grain" whisky, Dr. Bell ascertained that it was composed as follows (Report of 1891):

Amylic alcohol	... ...	42.2 per cent.
Butylic alcohol	... ...	33.4 ,,
Propylic alcohol	... ...	18.9 ,,
Ethylic alcohol	... ...	5.5 ,,

Dr. Bell further found that the "hot feints" from a patent-still distillery are remarkable for the amount of alcohol compounds of palmitic and oleic acids which they contain, and which are no doubt derived from the essential oils contained in the grain used in the production of the wash. As the steam passes through the descending wash in the patent-still the oils become decomposed, and the fatty acids uniting with ethylic alcohol form palmitate and oleate of ethyl.

Analyses of Whisky.

The Commission, after considering analyses of large numbers of Scotch pot-still whiskies and of a few Irish presented to it by witnesses, states that chemical methods fail to establish any definite relationship between the composition of the different varieties and the particular character they possess as regards flavour and aroma, some of the secondary constituents which exercise an important influence upon these qualities being present in such minute quantities as to render identification impossible. Upon this point the Commission states that of those constituents which have been identified many are allied in chemical constitution and properties, and can consequently be grouped together as families of similar substances—for example, acids, aldehydes, esters (compound ethers), and "higher alcohols," that is, alcohols higher in the homologous series than ethyl alcohol, and it is the total quantities of these families of allied subtances that are ordinarily estimated in an analysis.

The analyses showed that there was a very wide variation between pot-still whisky, not only from different distilleries but also between whiskies from the same distillery in different years. No relationship, however, was discernible between the analytical results and the characteristic flavours of the spirits from which they were respectively obtained.

Owing to the nature of the process in the patent-still the secondary constituents in the whisky so made are fewer in number and generally less in total amount, and as a matter of fact the Commission states that the great bulk of patent-still whisky is specially manufactured for blending with pot-still spirits. One source of the loss of flavouring constituents in the patent-still process is the separation of fusel oil through the hot feints; but it is stated that Dr. Bell pointed out another as a result of the special investigations which he carried out for the Select Committee of the House of Commons. In the course of some experiments in connexion with the changes which go on in the secondary constituents in whiskies during maturation, he separated the empyreumatic and other substances from the new pot-still whisky, and from a series of samples of the same kind of whisky bonded for different periods, and he found that those in the new spirit possessed an unpleasant odour combined with a malt flavour, but that those from the bonded spirits became more and more agreeable with increase of time of bonding. On making similar experiments with patent-still whiskies, he found that they were practically free from empyreumatic bodies even when new.

Medical.

The Report then proceeds to review the medical evidence. It seems desirable to quote the whole of this part in full:

"A number of witnesses gave evidence with regard to the possible deleterious action of different varieties of whisky. This evidence may be divided into two groups, first, that in which the witness was expressing a mere personal opinion, or was stating that which he believed to be an opinion held by a number of other persons. These opinions were usually based on effects said to be observed as a result of the consumption of some particular variety of whisky. Certain witnesses stated that it was a matter of common knowledge that deleterious effects were attributable to particular varieties of spirit, but in support of such statement we were unable to elicit from any witness direct and conclusive evidence resting on observations conducted with any approach to scientific accuracy.

"In the second group may be included the evidence of a smaller number of witnesses who had conducted experiments with scientific methods. The general tendency of the limited evidence thus given was to show that no conclusive proof of any special deleterious action could be attributed to any special variety of whisky.

"The action of whisky or other spirit on the human subject is necessarily very complex, and depends, not only on the quantity consumed and on the fact or extent of dilution, but also on the idiosyncrasy of the individual consumer.

"Many witnesses were inclined to attribute differences in the action of the spirit, and especially the production of deleterious effects, to differences in the nature and quantity of the secondary products, such as higher alcohols, ethers, furfural, etc.

"There are great individual differences not only between 'pot-still' and 'patent-still' spirit in these respects, but also between different varieties of 'pot-still' and different varieties of 'patent-still' spirits. Although the differences between some of the 'pot-still' and 'patent-still' whiskies are very great, yet it is difficult to draw a hard and fast line between them, inasmuch as some patent-still spirit may contain a higher proportion of some of these secondary products than some varieties of pot-still. This adds materially to the difficulty of determining whether there are any broad points of difference in the physiological effects produced by pot-still and patent-still spirits respectively. Further, a highly flavoured spirit may cause effects not obtained from one of less flavour owing to the effects which may be produced indirectly by the flavouring agent on the nervous system of the consumer, since many substances are known to produce marked effects on the digestive system merely as a result of the sensation produced by their flavour. In addition, a difficulty presents itself in the fact that a highly flavoured spirit is often partaken of in greater dilution than one containing a smaller proportion of secondary products.

"The evidence before us failed to establish that any particular variety of whisky was especially deleterious. Statements were not uncommonly made that new spirits and the cheaper variety of spirits consumed, for instance, at fairs, were specially liable to be deleterious and to cause some of the more severe symptoms associated with intoxication. This evidence generally amounted to little more than a mere statement, and we were unable to obtain proof within the personal cognizance of the witnesses. In some instances we were informed that it was the custom in certain distilleries for the workmen to consume new spirit, and that no specially deleterious effects had been observed to follow. On the other hand, it would seem that spirit when new is apt to develop an unpleasant taste, and therefore would be rejected by many.

"Dr. Thorpe gave us information as to the composition of a large number of whiskies which had been obtained by excise officers at fairs and public-houses in low-class districts in England, Scotland, and Ireland. The majority of the samples appear to have been merely new patent-still whiskies of an ordinary type, but a few in parts of Ireland were pot-still whiskies. We were unable to obtain evidence pointing to the presence of any known deleterious substances in excessive quantity in these spirits, or that any foreign substances had been added to them.

"The general tendency of the evidence on these matters was to show that any specially evil effects observed were rather to be attributed to the excessive quantity consumed than to any specially deleterious substance.

"We also failed to obtain any evidence from medical witnesses with reference to the question whether particular diseases, known to be due to the excessive consumption of spirits, could be attributed in different degrees to any particular variety of spirit. There are many districts where large hospitals exist in the midst of a poor neighbourhood, where it is known that cheap varieties of spirit are sold, and although in such hospitals the evil effects of alcoholism are frequently observed, and there are many instances of disease due to alcohol, yet the medical men observing these cases have not associated particular diseases with varieties of spirits.

"Some of the witnesses made the statement that patent-still whisky might possibly in certain instances be deleterious owing to the fact that such spirit might be distilled from damaged materials, and that these damaged materials might contain injurious and poisonous substances, but this statement was not made on any direct evidence that such ill effects had in any instance been observed. Although poisonous substances are known to exist in some grains as a result of disease of the grain, yet there was no evidence that such substances can pass over in the distillate obtained from the product of the fermentation of such grain. We were unable to obtain any definite evidence pointing to the presence of poisonous ingredients in the distillate derived from damaged material.

"A further question still presented itself, whether, of the varieties of whisky produced by the pot and patent still, one could be said to be more unwholesome than the other. Several witnesses expressed the opinion that the products of the patent-still were injurious to health, or produced intoxication more readily or in a more violent form than pot-still whisky, and that this might in part be due to the fact, as they alleged, that patent-still spirit produced a greater craving and a greater thirst than the pot-still spirit. These statements appear, however, to be merely a general impression derived from hearsay. On the other hand, a number of witnesses stated, some from personal experience, that the consumption of pot-still whisky was liable to induce ill effects—such as indigestion and subsequent headache—and that this was specially to be observed in persons leading a sedentary life. The experience of most witnesses seemed to point to the conclusion, in which we concur, that whisky derived from patent and pot still induces much the same effects if taken in the same quantity and in the same alcoholic strength.

"The only constituent of great importance from a hygienic point of view was stated by most of the scientific witnesses to be ethylic alcohol, the secondary products being of importance mainly in giving flavour to the spirit. A few witnesses held the opinion that the secondary products might produce slight effects other than those dependent on the mere flavour, but there was a conflict in the evidence of scientific witnesses on this point, and it was agreed that such effects, if any, were slight in amount. Further, certain witnesses examined the effects of large quantities of secondary products upon themselves and found, not only no difference between those prepared from patent and pot still whisky respectively, but that such secondary products, even when taken in large quantity, produced little or no effect.

"A number of witnesses laid considerable stress on the fact that pot-still whisky could be drunk with greater degree of dilution than patent-still whisky, and that therefore pot-still whisky might be a more satisfying and less dangerous beverage.

"It must also be borne in mind that the difference in the amount of secondary products present in the whisky produced by the pot-still and patent-still processes is not very great, and that therefore the actual amount of these secondary products in the quantity of whisky usually consumed is small, and hence the physiological effect produced by these secondary products must also be small compared with the effects produced by the ethylic alcohol itself.

"Although the higher alcohols which constitute a portion of the secondary products present in whisky have themselves a different physiological action from that produced by ethylic alcohol, and this action is a more harmful one, yet the actual quantity of these substances present in whisky is relatively so small compared with the quantity of ethylic alcohol, that the action of the spirit when consumed is almost, if not entirely, dependent on the ethylic alcohol. One witness was of opinion that the presence of secondary products in whisky led to the more rapid absorption of the spirit, but this conclusion did not seem to rest on any valid evidence.

"With regard to the medicinal use of spirits, it would seem that there has been a tendency of recent years to employ whisky to a larger extent than formerly; but the practice in different parts of the country and in different hospitals varies. Formerly, brandy was undoubtedly employed, both dietetically and therapeutically, in the treatment of disease to a greater extent than at present. Whisky has displaced brandy to a greater extent in dietetic treatment than in the treatment of acute diseases. In London from five to ten times as much brandy is ordered in hospitals as whisky, although, as the evidence shows, there is considerable variation in the practice of different physicians at different hospitals. The bulk of these spirits, if not the whole of them, would be prescribed in the course of treatment of acute diseases. In Scotland whisky is used to a greater extent even than in England. Most of the medical witnesses recommended that the spirits used in the treatment of disease should be of good quality and old. Some considered that pot-still whisky was preferable for this purpose to the patent-still variety, as they considered that more powerful medicinal properties were possessed by it

owing to the larger percentage of secondary products. The majority of medical witnesses attached no importance to the question whether the whisky were pot-still or patent-still, and considered that the value of it in the treatment of disease depended essentially on the ethylic alcohol. This view was held by the majority of observers who had directed their attention to the subject, and some adduced definite evidence in support of the statement that no difference in the results obtained could be attributed to the mode of preparation of the whisky. We concur in this view.

"With regard to the dietetic use of whiskies, all the medical witnesses were agreed that flavour plays a part of considerable importance, since a whisky that is unpalatable tends to interfere with digestion, while a whisky that is agreeable to the patient may increase the activity of the digestive processes, and also exert a favourable mental effect quite apart from the direct effect dependent on the alcohol itself. On this account they held not only that a mature whisky is preferable to a new whisky, but also that whiskies of different flavours may have a particular dietetic value in particular instances."

Blending.

The Commission states that blending, that is to say, the admixture of patent-still with pot-still spirit has been in use on a large scale both for the English and foreign markets for between thirty and forty years. It produces a more mildly flavoured and generally a cheaper article than the "self-whiskies," as the individual pot-still whiskies are commonly called, since the patent-still spirit costs less to manufacture. The Report adds that the market for blended whiskies is greater than that for the individual whiskies; so much so, that it would probably be safe to say that the majority of Englishmen who drink whisky seldom drink anything but a blend.

Conclusions as to Processes.

The Commission states that evidence given before it showed that in the year 1907, whereas 22,000,000 proof gallons of spirits were produced in patent-still distilleries in Scotland and Ireland, only 14,000,000 proof gallons were produced from pot-stills. There was evidence also that patent-still spirit, blended or unblended, has long been known as whisky, and that pot-stills differ so much that it would be difficult to frame a legal definition which would not either exclude certain types now commonly recognized as pot-stills, or include other types not looked upon as legitimate variations of the pot-still; on the other hand, there was no evidence that the form of still had any necessary relation to the wholesomeness of the spirit. For these reasons the Commission is unable to recommend that the use of the word "whisky" should be restricted to spirit manufactured by the pot-still process, and gives the following definition:

"Whisky" is a spirit obtained by distillation from a mash of cereal grains saccharified by the diastase of malt; "Scotch whisky" is whisky, as above defined, distilled in Scotland; and "Irish whisky" is whisky, as above defined, distilled in Ireland.

Declarations.

The Commission reports that it is not desirable to require declarations to be made as to the materials, processes of manufacture or preparation, or age of Scotch whisky, Irish whisky, or any spirit to which the term "whisky" may be applied as a trade description. "The customer," the Commission adds, "asks for a glass of whisky and gets it. As a rule, he does not ask for any particular description of whisky. The customer knows what he likes, and if he does not get it he seeks for it elsewhere."

BRANDY.

Of the total quantity of spirit imported into the United Kingdom from various foreign countries and British possessions in the year 1907, 2,194,748 gallons were shipped from France and only 149,014 from other countries.

French Brandy.

The French equivalent for the English word "brandy" is *eau-de-vie*, with this difference, that whereas in England grape spirit alone is generally meant by the term brandy, in France spirit made from wine, cider, perry, grape skins left after wine making, cherries, plums, or other fruit are included under the term *eau-de-vie*, which is also applied to any mixture of such spirits with industrial alcohol made from grain or beetroot.

Wine spirit proper—*eau-de-vie de vin*—is made in every part of France in which wine is made, but the Commission considers that there is no doubt that the best brandies, in respect of flavour and commercial value, are made in the Cognac region. Next in order of commercial merit come the brandies made in the Armagnac, including the Marmande district; a certain amount of brandy is made in the Nantes district; while large quantities are made in the Midi, in the Hérault, Gard, Aude, and Pyrénées Orientales, these brandies being commonly known as the "Trois-Six de Montpellier." The *Eaux-de-vie de Marc*, made from the residues of the wine-press, form still another class.

Cognac Brandy.

"Cognac," as the description of a spirit, is not expressly defined in the French law, but the name "eau-de-vie de Cognac," or "Cognac," simply can only be applied legally to spirits made in the Cognac region from wine grown therein. It has for some time past been generally accepted that the Cognac region comprises a certain part of the two departments of Charente and Charente Inférieure, and there has recently been a legal delimitation of the area. The region is locally subdivided into the Grande or Fine Champagne, the Petite Champagne, the Borderies, and the Bois, according to the quality of the wine produced. The soil is mainly calcareous; the grape grown is small in size and white in colour, and the wine is of inferior quality for drinking purposes.

Cognac brandy is manufactured in the Charentes both by the professional distiller and by the farmer, who grows his own grapes and makes his own wine. Several firms buy nearly all the brandy they need from the farmers.

Distillation.—The distilling apparatus in general use by both distiller and farmer is a simple pot-still, varying in size from 7 to 9 hectolitres, that is, 154 to 198 gallons. The still, which is built in brickwork, having only a small bulbous head exposed, is generally heated by means of a furnace; in a few distilleries the stills are heated by steam, and there is some controversy between distillers using these different heating agents as to the respective merits of each. Wood is very generally used in the furnaces, and is considered the best fuel. Attached to the still is a vessel called a "chauffe-vin," which acts as a wine-heater; being filled with wine, through which the pipe conveying the spirit vapour to the refrigerator passes, it does duty at once as a wine-heater and as a partial refrigerator; the wine being heated in the vessel is quickly brought to boiling point when passed into the still, and there is thus a saving of fuel. But the "chauffe-vin" is not always used, even though the stills are provided with the vessels. In the process of manufacture there are two distillations which may be compared with the process of whisky-making in the Scotch pot-still distilleries; the resulting spirits of the two distillations are termed "*brouillis*" and "*bonne chauffe*" respectively, descriptions equivalent to the "low wines" and "spirits" of the whisky distiller. In some distilleries, however, stills known by the appellation "*à premier jet*" are in use. These produce the finished spirit at one continuous distillation. Attached to and above the ordinary head of the still is a vessel into which the condensed spirit of the first distillation is conveyed, and this spirit is vaporized by the heat of the spirit vapour rising from the still itself on its way to the refrigerator. The best distillers do not consider that this still can produce the finest spirit; it is used for producing spirit of a higher strength than ordinary, and also in the manufacture of liqueurs. The stills are worked very slowly and regularly, ten hours being the normal time for completing the distillation of a charge of wine. The quality of the spirit depends greatly on the skill of the stillman in working the still.

The wine used in the manufacture of "Cognac" contains from 6 to 11 per cent. of pure alcohol, or, roughly, from 10 to 20 per cent. of proof spirit; the average strength is from 7½ to 8½ per cent. of alcohol or from 13 to 16 per cent. of proof spirit. The finished spirit is run from the still at a strength of about 25 over proof. The brandy is sweetened with cane sugar and slightly coloured, the object of colouring being merely, as in the case of whisky, to keep a given brand up to a given level of colour.

A large quantity of brandy is made in the Midi. It is of inferior quality to that produced in Cognac, but it is probably made exclusively from wine, and the comparatively slight difference between the prices of wine and of grain and wheat make it improbable that distillers in any part of the South of France would sacrifice the privilege of sending out their spirit under the special permit which is a guarantee that the brandy does not contain grain or beet spirit.

Eau de vie de Marc is a term restricted by French law to spirit derived from the distillation of the skins of fresh grapes from which the greater part of the juice has been extracted. Some such spirit is said to be very fine and to command a high price, but not much appears to be imported into this country. The Commission was informed that the "dop" brandy of South Africa is produced in this way.

Other Brandies.

The Commission states that Algerian brandies are said to be of high quality. They are distilled in Algeria from Algerian wine and sent to France, and an increasing quantity is reshipped from the Charente to this country.

According to the Customs returns, 13,048 gallons of brandy were imported from Spain during the year 1907, but the quantity has been diminishing during the last few years. There are brandy distilleries in many parts of Spain. The material used is said to be only fully fermented wine from fresh grapes, and the stills are of a comparatively simple type, similar to the "à premier jet" stills of the Charente. Spanish brandies are said to be similar in flavour to the French brandies, and to command a high price.

The grapes from which Egyptian brandy is made "are grown in Roumelia, and parts of Greece, Cyprus, and Asia Minor. The grapes are brought in fresh from the vines into Alexandria, where they are converted into wine . . . and from wine they are distilled as brandy." The Egyptian brandies apparently possess a very full flavour, and are very cheap. The Commission had evidence that, in addition to these brandies, there are some so-called Egyptian brandies which are not distilled in Egypt, and which, it was suggested, are probably made from currants grown in Greece; 57,712 gallons of brandy were entered by the Customs as imported from Egypt in 1907.

The Customs returns also show entries of considerable quantities of brandy from Germany, and small quantities from other foreign countries and British possessions.

Hamburg brandy is the name commonly given to a spirit stated to be manufactured in Germany from potato or beet spirit and flavoured so as to imitate grape brandy, and similar imitations are apparently made in the North of France, in Belgium, and in other foreign countries. British brandy is prepared by redistilling duty-paid spirits with flavouring ingredients or by adding flavouring materials to such spirit. It is often mixed with foreign, generally Cognac, brandy, and is sold largely for cooking purposes.

The conclusion of the Commission is that the term brandy is applicable to a potable spirit manufactured from fermented grape juice and from no other materials, but that the compounded spirit long sold by the name of British brandy is entitled still to be so named and sold.

Rum.

The evidence taken by the Commission was to the effect that there are two distinct types of rum, one being represented by Jamaica and the other by Demerara rum. The first type is the result of slow fermentation, lasting from ten to twelve days, of a wash set at a relatively high density; the second is the result of a rapid fermentation, lasting from thirty-six to forty-eight hours, of wash set at a low density.

For some years a cheaper imitation of rum has been made on the Continent, principally in Germany, and according to the recommendations of the Select Committee of 1891, rum is now entered under two heads:

Rum (imported from ports in sugar-cane producing countries).
Imitation rum (imported from ports in countries in which the sugar cane is not produced).

Imitation rum may not be blended or mixed in bond with "rum" for home consumption. Rum, or imitation rum and other foreign spirits, may, however, be mixed for exportation, but the word "mixed" must be marked on one head of each cask containing the mixed liquids.

The Commission defined rum as "a spirit distilled direct from sugar-cane products in sugar-cane growing countries."

Gin.

All witnesses agreed that gin should be made from cereals—maize, malt, and rye being the main materials used in the production of the original spirit; juniper berries are regarded as essential for the subsequent flavouring, but various herbs are also used by individual makers. The manufacturer of gin is generally a rectifier only, and buys the spirit he uses from patent distilleries. In the majority of cases the rectified spirit is distilled with the juniper berries and other flavouring materials in a kind of pot-still, but in some cases the flavouring materials are distilled separately and added to the alcohol afterwards. All the witnesses examined objected to the use of molasses on the grounds, first, that gin is essentially a British spirit, which the consumer expects to be made from grain, and secondly, that molasses yields a coarse spirit unsuitable far the production of gin. It was also stated in evidence that ordinary patent-still spirit flavoured with essences and not subjected to subsequent rectification was improperly sold as gin, and was often exported under the name of gin, and sold at a much lower price than the genuine article.

Geneva (Hollands).

Geneva, also called "Hollands," "Hollands Geneva," or "Hollands Gin," is imported into this country from Holland. The name "Geneva" is probably derived from the Dutch word "jenever," meaning juniper.

Although distinct in flavour, the spirit is similar in many respects to English gin, inasmuch as in both cases the genuine article is made from grain only and flavoured with juniper.

Geneva is now made from a mixed mash of malted barley, rye, and maize in more or less equal proportions. The whole mash is fermented together and is then distilled three times in a pot-still, the result being a spirit called "*moutwijn*," or maltwine. The *moutwijn* is then redistilled, and juniper berries and other flavourings added.

The Geneva manufacturers do not make the *moutwijn* themselves, this spirit being made, in Schiedam in the main, in small pot-stills and bought through brokers.

It would appear that a practice has grown up of selling under the name of Geneva a spurious spirit produced by a mixture of molasses spirit with a little Schiedam *moutwijn*. Some attempt was made by the Municipality of Schiedam to institute a form of control by which genuine Hollands Geneva could be guaranteed, but the system does not appear to have met with much success.

Liqueurs.

The name "liqueur" is, as a rule, applied to imported sweetened spirits—that is to say, to spirits to which any matter has been added after distillation, which imparts to it the quality of sweetness, and reduces the apparent alcoholic strength as determined from its specific gravity. British products of the same class are usually called "cordials."

Liqueurs and bitters have no defined alcoholic strength; the alcohol is merely a solvent for the flavouring essences. Liqueurs of the best quality are generally made with old spirit, but new spirit is probably used for the manufacture of the cheaper articles. Some foreign countries have placed restrictions upon the sale of certain liqueurs, owing to the toxic character of the materials used in their manufacture. The sale of absinthe, for example, has been entirely prohibited in Switzerland, and in France it can only be sold at a high alcoholic strength with a correspondingly small proportion of wormwood extract. The quantity of absinthe consumed in this country is very small.

Legislative Action.

With regard to compounded spirits generally the Commission reports as follows:

We have been unable to recommend any restrictions upon the numerous materials used in the preparation of gin, Geneva, and other compounded spirits which are known to the British trade, or upon the processes which are employed in their manufacture. In the absence of information as to the nature of the materials

employed we can express no opinion on the wholesomeness or otherwise of particular compounds, but we received no evidence that any spirits of this nature (with the exception of absinthe) have a specially toxic action.

The Commission does not recommend the adoption of the ether standard—that is to say, the presence of a certain proportion of ethers as a test of genuine brandy. Dr. Fernbach, the Principal of the Fermentation Department of the Pasteur Institute, Paris, showed that the proportion of ethers in genuine Cognac brandies was sometimes below the limit proposed to be fixed by the standard. In order to form a reliable opinion it is necessary to take into account all the usual analytical data, and in addition the character of the spirit as regards flavour and any other information obtainable from the Excise Record as to the origin of the sample. On this point the Commission reports:

While admitting the possibility of highly rectified wine spirit, flavoured with essences, being sold as brandy, we doubt whether the practice is sufficiently common to warrant any attempt being made to limit the extent of rectification which may be permitted. But, even if it were so, we consider that it would be very difficult to enforce such a limitation, and we observe that no attempt has been made to do this under the French law.

Our conclusion, therefore, is that the determination of the application of the term "brandy" in this country cannot be controlled by the nature of the apparatus or process used in the distillation of the spirit.

Although, however, it is impossible, with our present limited knowledge of the composition and properties of the secondary constituents, to establish trustworthy chemical standards for controlling the description of potable spirits, we are nevertheless satisfied that chemical analysis is capable of affording very important assistance in many, if not in all, cases of suspected misdescription, when the results of analysis are taken in conjunction with other evidence, such as that of the expert taster, and Excise records when obtainable and when a common practice as regards methods is employed.

In order to assist in a more certain conducting of prosecutions under the Sale of Food and Drugs Acts it may be well to consider whether statutory provision may not be made for affording to the presiding magistrate assistance in determining the cases submitted to him by authorizing him to obtain, if he thinks fit, the assistance of two assessors, being persons of practical or scientific knowledge of the matters involved, to sit with and advise him thereon. And for such purpose it may also be desirable to form under authority a panel from which such assessors may be selected.

It is also desirable to consider whether a Committee of skilled persons may be formed under Governmental authority, who might assist in mitigating some of the difficulties mentioned above by advising on technical questions which affect the administration of the Acts by local authorities and the practice of public analysts.

LITERARY NOTES.

THE first number of *Heart*, a new periodical to which attention was called in the JOURNAL some time ago, contains much matter of first-rate quality. Professor Cushny contributes a paper on the irregularities of the mammalian heart observed under aconitine and an electrical stimulation. Dr. James Mackenzie discusses nodal bradycardia, and Dr. Thomas Lewis deals with paroxysmal tachycardia. Dr. Leonard Hill treats of the measurement of systolic blood pressure in man. The journal, which is published by Messrs. Shaw and Sons, Fetter Lane, E.C., is excellently printed, and the tracings and charts are very clear. We fully agree with what Dr. W. H. Gaskell says in his prefatory note that *Heart* "will be of great value to the medical man, as it will focus together the work of the laboratory and the work of the hospital ward; and to the physiologist, because during his investigations it will keep ever present to his mind the nature of the problems which, in the opinion of the medical man, are pressing urgently for solution." The editor is Dr. Thomas Lewis. Our new contemporary will occupy a place in the current literature of medical science, which, as far as English is concerned, has hitherto been unfilled.

Shakespeare refers to stage fright: perhaps he had personal experience of the feeling. In his Sonnets (XXIII) he says:

> As an imperfect actor on the stage,
> Who with his fear is put beside his part,
> * * * * *
> * * * * *
> So I, for fear of trust, forget to say
> The perfect ceremony of love's rite.

M.D. writes: "Can nothing be done to improve the composition of writers on medical subjects? It would indeed be a mercy if, in these days, when new books are but too numerous, authors would refrain a little longer, and study their grammars. From a recent periodical I give some extracts:—

"'A Cambridge B.A.' writes:

In the former condition vaso-dilators will tend to *slow* the blood current, in the latter condition, *it* will lower the pressure.

No dictionary to which I have access gives a verb 'to slow' and the pronoun 'it' is obviously wrong. In the next article 'M.B., B.S.Lond.' writes:

For it may be said that the use of the one or the other determines the action taken by many in regard to the attitude they assume towards the employment of . . . .

Surely a fine example of obscure prolixity! In the article immediately succeeding, 'M.A., M.D.Camb.' begins as follows:

The diagnosis of arterio-sclerosis, apart from certain cases of raised arterial blood-pressure, which afford valuable evidence of early arterial changes, is, generally speaking, only made when the condition is obvious by aid of the finger and the eye.

I fear I am too stupid to understand what is meant. The same writer proceeds:

It would seem, however, to be a matter of high importance that the physician should be able to detect in its early stage the process which leads to arterio-sclerosis, a much to be desired result, which may possibly be achieved by studies of the alterations in function of the arteries in this pathological condition or conditions.

Please tell me, is arterio-sclerosis a much to be desired result?

"This article is followed by one on rheumatism by 'M.D., B.S.Lond.,' who writes:

To those who have kept themselves fully informed . . . . *one can hope to tell nothing new.*

I suppose he means 'one cannot hope to tell anything new.' And a little further on:

And even now we find it difficult *to accurately separate off* certain cases, etc.

Shade of Lindley Murray!

"Now, Sir, these four consecutive papers are one and all distinctly good in my poor opinion. At the lowest estimate they bear evidence of laborious research, and it does seem a pity that a little further trouble was not taken to make them as readable as they are valuable."

In his last book, *La Chemise*, Anatole France has some sly hits at the medical profession. King Christophe V complained of loss of appetite, pains in the loins, weight in the stomach, shortness of breath and palpitations of the heart, headache, giddiness, cramp—in short, of all the ailments catalogued in quack advertisements and Christian Science "testimonies of healing." Naturally his two chief physicians, Dr. Saumon and Professor Machellier made the diagnosis of "neurasthenia." The condition is described by one learned leech with judicious vagueness as an "imperfectly defined morbid entity." The other discourses on it in more eloquent if not more enlightening fashion as a "veritable pathological Proteus who like the Old Man of the Sea, transforms itself ceaselessly in the grasp of the practitioner and assumes the most grotesque and terrifying appearances; by turns the vampire of a gastric ulcer or the snake of a nephritis, suddenly it displays the yellow face of jaundice, shows the hectic cheeks of tuberculosis, or twines strangling hands which would make one believe that it has hypertrophied the heart; at last it presents the spectre of all the ills that afflict the human body, till, yielding to medical art and owning itself beaten, it flies away in its proper figure of ape of diseases." Saumon was handsome and popular with women; he recognized aristocracy even in a caecum and a peritoneum, and was careful in his regard of the social distances which separated one uterus from another. Machellier, short and stout, was copious in speech. He and his professional brother hated each other; but having noticed that in fighting they destroyed each other, they affected a perfect understanding and a full agreement in opinion; one had no sooner expressed an opinion than the other made it is own. Although having a mutual contempt for each other's intelligence, one was not afraid to borrow the other's opinion, "knowing that there was no risk in doing so, and that they would neither

gain nor lose by the exchange, as it was only medical opinions that were in question, so they agreed on a course of treatment for the King, but the unfortunate monarch got steadily worse. His courtiers urged him to call in Dr. Rodrique whose fame extended over the whole world. He charged fees of an amount that made millionaires recognize his merit. His brethren, whatever they thought inwardly of his knowledge and character, spoke with respect of a man who raised the medical fee to a height till then unknown. Many praised his methods, and professed to be able to apply them at a lower figure. Dr. Rodrique excluded the products of the laboratory and of the pharmacy from his therapeutic armament, and his methods of treatment had a disconcerting eccentricity and inimitable singularities. An instance of this forms the plot of the story. The King is unwilling to call him in, for, as he sagely observes, he knows that his official doctors do nothing, but he does not know what Rodrique is capable of doing. Nevertheless, after much intrigue and diplomacy he is induced to send for Rodrique whose prescription is that His Majesty shall wear the shirt of a happy man next his skin so that his dry integument may absorb the particles of happiness exhaled by the sudoriparous glands of the happy man. With some difficulty the King is got to consent to submit to this treatment; then the difficulty is to find a happy man. When found at last, he has no shirt!

The obituary notice of the late Dr. C. H. F. Routh, contributed by Mr. Alban Doran to the *Journal of Obstetrics and Gynaecology of the British Empire*, April, 1909, has been reprinted by Messrs. Sherratt and Hughes. It is interesting in itself, and important as a contribution to the history of medicine. Routh worked with Semmelweis in Vienna, and was the apostle of the new gospel in this country. He made Semmelweis's work known in a communication which was read before the Royal Medical and Chirurgical Society in 1848. The paper was followed by a lively discussion, in the course of which the President, J. Moncrieff Arnitt (according to the report published in the *Lancet* of December 9th, 1848), "inquired if it accorded with the experience of accoucheurs present that pupils from the dissecting room gave puerperal fever to their lying-in patients more frequently than midwives." *This appeal of the President was not responded to by a single accoucheur.* Semmelweis was deeply grateful to Routh for his support, and sent him a copy of his work *Die Aetiologie, der Begriff und die Prophylaxis des Kindbeltfiebers.* In it the Vienna investigator states that Routh informed him, in a letter dated January 23rd, 1849, that he had expounded his views before the Medico-Chirurgical Society. He gives a summary of the debate. The letter is written in Latin, which, if not exactly Ciceronian, and perhaps here and there inclining to the canine dialect, is perfectly clear. We quote it to show that Latin, so long the universal tongue of learning, might still be the international language of science if it were rationally taught in schools. We have taken the liberty to correct a few obvious misprints:

Comitiis in ultimis septimanis Novembris, 1848, convocatis illic discursus, in quo tuam inventionem enunciavi, reddens tibi, ut voluit justitia, maximam gloriam, praelectus fuit. Enim vero possum dicere, totum discursum optime exceptum fuisse, et multi inter socios doctissimos attestaverunt argumentum convincens fuisse. Inter hos praecipue Webster, Copeland et Murphy, viri et doctores clarissimi, optime locuti sunt. In *Lancetto*, Novembris, 1848, possis omnia de hac controversia contingentia legere. Credisne novos casus, qui in hospitio ex tempore mei abitus admissi sunt, opinionem tuam confirmant?

Febrisne puerperalis rarior est quam ante? Si morbus sic periculosus in cubilibus obstetriciis non adsit ut ante, certe effectus magni momenti denuo firmatur. In Praga quoque, ubi febris puerperalis tum frequenter obvenire solebat, eisdem causis consecuta fuit ingenerari!

In another letter, dated December 3rd, 1849, Routh writes:

Jam inventionis tuae fama ac veritas in existimatione publica accrescit, et inter omnes medicorum societates quam res est maxime utilis percipiunt et agnoscunt, nec vero etiam temere, nam magna est veritas et praevalebit.

The readiness with which Semmelweis's teaching was accepted by the profession in England is in striking contrast with the prejudice and incredulity with which it was received in Vienna.

Medical News.

THE annual meeting of German bath physicians will be held in Mainz from September 9th to 11th.

STAFF SURGEON SERGE LENTOVSKY, Honorary Surgeon to His Imperial Majesty the Emperor of Russia, has been appointed by King Edward to be an Honorary Member of the Fourth Class of the Royal Victorian Order, on the occasion of the visit of the Emperor and Empress of Russia.

WE are asked to state that the address of the Secretary-General of the International Congress in Budapest is VIII. Eszterházy-utca, 7, Budapest, until August 19th, and after that date his office will be removed to VIII. Múzeum-körut, 6–8, Budapest. The Central Travelling Ticket Office (V. Vigadó-tér, 1, Budapest) has reserved a number of rooms for those who have not yet sent in their adhesions and subscriptions, but all intending visitors are advised to write at once in order to obtain the advantages offered by the railway and steamboat companies.

DR. ANTON BREINL, of the Liverpool School of Tropical Medicine, has been appointed Director of the newly founded School of Tropical Medicine in Western Australia. Dr. Breinl was at one time first assistant to Professsr Chiara in Prague; he joined the Liverpool School of Tropical Medicine in 1904, and shortly afterwards was a member of the school's yellow fever expedition to Manaos, where he contracted the disease. More recently his attention has been chiefly given to the subject of sleeping sickness, on which several papers by him have been published in this JOURNAL.

THE Royal Sanitary Institute has issued prospectuses of the courses of lectures and demonstrations arranged for the next session, which begins in September. Full particulars can be obtained on application to the secretary at the new offices of the institute, 90, Buckingham Palace Road, S.W., and it must suffice here to state that the arrangements include courses for sanitary officers in sanitary science as applied to buildings and public works, on hygiene in its bearing on school life, and for women health visitors and school nurses, and two courses on meat inspection.

THE Humanitarian League has forwarded to the President of the Local Government Board a memorial praying that steps may be taken to replace all private slaughter-houses in London by public abattoirs. It is pointed out that this course was recommended by a committee appointed by the Admiralty four years ago, by the Royal Commission on Tuberculosis thirteen years ago, and by the Public Health Committee of the London County Council, and other medical and sanitary authorities on various occasions. Among the signatures are the names of Sir Thomas Barlow, Sir Samuel Wilks, Sir Jonathan Hutchinson, and those of the medical officers of health for sixteen metropolitan boroughs, and many other medical men.

THE annual luncheon of the Continental Anglo-American Medical Society was held on Thursday, July 29th, at the Grand Central Hotel, Belfast, the chair being occupied by Professor Osler, one of the Honorary Presidents of the Society; over forty members and guests were present, among the latter being Professor Bryson Delavan and Dr. Emil Mayer (New York), Professor Fehling (Strasburg), Professor Calmette (Lille), Dr. Louis Wickham (Paris), Professor Jacobs, Dr. Bordet, Dr. Delsaux, and Dr. Toubeau (Brussels), Sir Lauder Brunton, Bart., Sir Malcolm Morris, K.C.V.O., Sir James Barr, and Dr. Edwin Rayner. Professor Osler proposed the toast of "Success to the Society," emphasizing the value of the Society not only as a bond of union among its members but for benefit to the profession in England and America, by giving them the names of physicians who speak their own language to whom they could with confidence entrust their patients travelling on the Continent of Europe and in North Africa. Dr. Brock returned thanks for the Society, and proposed the health of "The Guests," coupled with the names of Professor Calmette, Professor Delavan, and Dr. Walton Browne, who made appropriate replies, Professor Delavan speaking of the great usefulness of the small sheet lists of members of the Society, a copy of which he gave to each of his patients starting for abroad. Dr. Samways proposed the health of "The Chairman," which was enthusiastically received, and thus brought to a close a most successful meeting.

British Medical Journal.

SATURDAY, AUGUST 14TH, 1909.

PENSIONS FOR ASYLUMS OFFICERS.

WHEN the "slaughter of the innocents" which marks the approaching close of a parliamentary session takes place, we trust that one bill, introduced by a private member, but which is now emerging from the careful consideration of a Select Committee, may at least be spared, and be put through its later stages with the assistance of the Government. We refer to the Asylums Officers' Superannuation Bill. This Bill was introduced by Sir William Collins in March of this year, and was "backed" by Colonel Lockwood, Sir Walter Foster, Sir Francis Powell, Sir John Batty Tuke, Sir John Jardine, Dr. Rutherford, Mr. Charles Roberts, and Mr. Ramsay Macdonald. It is clearly, therefore, a bill supported in all quarters of the House. It secured a second reading, unopposed, in April, and was at once referred to a Select Committee under the Chairmanship of Mr. J. M. Henderson. Evidence was taken, in public, from the Home Office and the London County Council, from Dr. Shuttleworth, Dr. Nolan, Dr. A. C. Johnstone, Dr. A. R. Urquhart, Dr. Bowie, Dr. C. H. Bond, and others. It is understood that no serious opposition to the bill was forthcoming, and that the Committee is just about to report to the House, suggesting a few amendments in detail.

The case for the bill is exceedingly strong. For some half-century asylum authorities have had discretionary powers in England and Wales since confirmed by the 280th Section of the Lunacy Act of 1890, under which many authorities have pensioned officers over 50 years of age after fifteen years' service, but on no uniform or recognized basis or scheme. Similar powers have for many years existed in Ireland, but in Scotland no such optional statutory sanction for superannuation exists. The object of the bill is to substitute for these discretionary powers, where they exist, and to provide where they do not exist, a system of assured pensions for asylum officers on a recognized scale and upon a contributory basis.

The Poor Law and the police services offer strong precedents for such a reform, and the principles underlying their methods of superannuation have, we understand, been imported largely into the bill. Under the present system, or lack of it, we hear of cases in which asylum authorities have exercised capriciously and inequitably their present optional powers; in nearly a dozen cases we know of authorities who refuse to exercise them at all, and in some instances even require officers on appointment to sign away any expectations that the statute might seem to hold out to them.

It is not surprising that witness after witness should have testified before the Select Committee—as, indeed, the Lunacy Commissioners have, year after year, reiterated in their reports—that the asylum service and the care of the insane suffer for want of that attractiveness, security of tenure, and expectation of provision for declining years which a reasonable scheme of pensions would be calculated to ensure.

The Medico-Psychological Association and the Asylum Workers' Association have strongly supported legislation in this direction and have approved the bill of Sir William Collins; moreover, at the Annual Meeting of the British Medical Association at Belfast the Section of Psychological Medicine adopted a resolution expressing its approval of the principles of the bill. The Home Office and the London County Council (as well as many other local authorities) have welcomed it, and it would be piteous if, after the favourable position the bill has attained, it should fail to pass into law this session.

It is idle to say that asylum officers should wait for a general scheme of superannuation for all municipal servants. That is not the way that legislation has proceeded in the past. The more exacting services, like those of the police and fire brigade, have been picked out for early and special treatment, to mention only a few cases. And may we ask what service—municipal, or parochial, or any other—claims sympathetic treatment more deservedly than that of those who work among and for persons of unsound mind? Whether we have regard to the stress, and excitement, and peril of the acute wards to those in charge, or the dreary and repellent duty daily and nightly discharged by those entrusted with the care of chronic dements and paralytics, we challenge contradiction when we assert that for physical and mental strain this service is unsurpassed among pacific occupations.

When this assured pension scheme is backed up by the voluntary acceptance by those for whom it is intended of a compulsory contribution to be levied upon their salaries and wages, the bona fides and the urgency of the demand for such scheme become both obvious and irresistible.

We wish to urge alike on the Government and on legislators, wearied though they may well be by their assiduous application to the claims of high finance that they should not neglect in this minor sphere of financial reform the claims of some of the most deserving of officers charged with the care of the most pitiable of mankind.

ENGINE DRIVERS AND COLOUR TESTS.

THE importance of excluding persons from service as engine drivers whose colour vision is not normal will not be disputed. The whole matter, indeed, appears so simple that the public perhaps believes any further discussion unnecessary, since it is known that colour-vision tests are employed, and it is naturally believed that these tests determine with certainty whether the men can distinguish red lights from green lights, which is all that is necessary for the travelling public. That this view is entirely false can be demonstrated, and it can further be shown that many engine drivers on the roads do not possess a colour vision which justifies the trust placed in them. Dr. Edridge-Green, who has studied this question deeply, has communicated his views to the Royal Society, the British Medical Association, and other societies. According to his researches and observations, the determination of normal colour vision cannot be safely conducted by means of the usual test by Holmgren's wools. Persons who are capable of passing a test of matching colours may yet

fail under given conditions to determine colours correctly, and may thus form a real danger to the public if entrusted with the driving of an engine. It is well known that engine drivers after a long run in an express train at a high speed are often so fatigued that they have to be assisted off their engines. Supposing that the driver possesses a limitation of colour perception, which under the influence of good illumination and freedom from exhaustion enables him to distinguish the primary colours correctly, what will be the effect of a degree of fatigue such as that mentioned? It is highly probable that the man will become practically monochromatic. Von Kriess has suggested a classification of the different degrees of colour perception based on the Young-Helmholtz three-fibre theory. He assumes that every form of light, no matter of what colour, can be reproduced by a mixture of the three different lights, red, green and blue. The visual perception, therefore, is a function of an organ which receives impressions from three variables. Normal persons are therefore trichromatics. When the colour vision is less perfect, so that the colours appreciated can be reproduced by a mixture of two colours—for example, red and blue—the vision is termed dichromatic, while persons who are totally colour-blind are spoken of as achromatics. Edridge-Green, holding that the normal sighted distinguish six colours in the spectrum, proposes for them the term "hexachromic"; those who only see five colours he calls "pentachromic," those who see four "tetrachromic," and so on, while colour-blind persons are monochromic. In von Kriess's scheme, those persons whose vision lies between trichromatic and dichromatic are termed "abnormal trichromatics." This would correspond to the penta-, tetra-, and tri-chromics of Edridge-Green.

A striking instance of the importance of recent researches on this subject is afforded by a case reported by Dr. Schlodtmann.[1] He was asked to test the sight of a man who was employed as stoker, and was ripe for promotion to driver. Vision was perfect, and, on testing with Holmgren's wools, no gross mistakes were made, but it was noticed that the man selected the wools slowly and with some hesitation. Actual mistakes were limited to a confusion between greyish and brownish bundles. Tested with Nagel's cards, he made a few slight mistakes, but these revealed, in Schlodtmann's opinion, errors in colour perception. When tested with Stilling's pseudo-isochromatic tables he failed completely, save with the simulation tables, and he failed materially with Pflüger's contrast tables. Another ophthalmologist was consulted, and the man was passed as fit for driver's work. In order to determine whether the results obtained by Nagel's method were reliable, Dr. Schlodtmann requested the railway authorities to submit the man to an examination by an undoubted expert. The report of this gentleman stated that the man was an abnormal trichromatic, with defects in green perception. In view, however, of the fact that he had had experience of the road as stoker, it was considered safe to pass him as a driver. As the facts elicited by the expert coincided with his own observations, Schlodtmann undertook further tests. First he took the man out immediately after sunset and showed him railway signals. Out of twelve or fifteen signals, he mistook red for green or green for red twice. Both false replies were given definitely and repeated when the question was repeated. After this, the man's eyes obviously got accustomed to the conditions of light and no more mistakes were made. Next Schlodtmann and a railway official accompanied the man on an engine. As the engine approached a station a number of lights of varying intensities presented themselves and formed excellent objects for testing. The man made a large number of mistakes. Once he failed to see a green signal; several times he mistook white lights for green signals, and in several instances he took a considerable time to determine where red and green signals were placed. This experience naturally decided the man's fate, and excluded him from train driving. Some time later, when there was no longer any question of his suitability for driving, he was again examined. Tests by Holmgren's wools were faultlessly gone through, but Nagel's tests showed numerous failures. Schlodtmann discusses the physiological and physical aspects of the case, and draws the conclusion that Nagel's method is not too severe a test to apply to engine drivers, and that Holmgren's matching wools are insufficient for the detection of abnormal colour vision. There is no doubt that if the man had been tested by Edridge-Green's spectrum method, he would have exhibited the characters of a tetra- or even tri-chromic. That visual defects of this kind are not uncommon is certain, and it is for this reason highly important that the subject should be reconsidered by the railway and State authorities, and that higher standards of tests should be required for such persons as engine drivers and navigating officers to whose charge the lives of the travelling public is entrusted.

[1] *Deut. med. Woch.*, November 26th, 1908.

POTABLE SPIRITS.

THE final report, issued this week, of the Royal Commission on Whisky and other Potable Spirits does not add very much to information otherwise available, but it brings together in a short and on the whole very readable form facts with regard to most of the spirituous liquors in common use. Special attention is given to the manufacture and properties of whisky, for the Commission was appointed primarily in consequence of a decision in two prosecutions brought by the Islington Corporation, the main point at issue being whether patent-still spirit could be properly described as whisky. The magistrate held that it could not, but the Commission, in an interim report published rather more than a year ago, expressed the opinion that the term might properly be applied to any spirit manufactured from malt, or from malt and unmalted barley, or other cereals, whatever the nature of the processes or apparatus used for distillation.

It appears that the word "whisky" is not older than the end of the eighteenth century, the spirit which had been manufactured in Scotland at least two centuries earlier having apparently been known as *aqua vitae*. All whisky is made by mashing grain which is then crushed and extracted with hot water, yielding a "wort," which is fermented to produce a "wash." The difference in the mode of manufacture resides in the methods of distillation. In the old pot-still the fire is applied directly to the vessel containing the fermented liquor or wash and at least two distillations are required. The object of the patent-still invented in 1831 was primarily economy, the loss of heat being diminished and the clean spirit being obtained by a single process. The product of

the patent-still is more nearly pure ethylic alcohol than the product of the pot-still, the latter containing a larger proportion of savourous secondary products. These products, though present in very small quantities, appear to give to the whisky the qualities which the connoisseur finds palatable. But it would seem that the taste for an unblended pot-still whisky is acquired, and the Commissioners feel justified in asserting that the majority of Englishmen who drink whisky seldom drink anything but a blend, patent-still whisky being used mainly for diluting the flavour of the pot-still whisky; or, to put the matter the other way, it may be said that pot-still whisky is used for the most part to give the desired flavour to the patent-still whisky which is a more featureless beverage. Further, it appears, that a blended whisky kept in wood undergoes certain changes commonly called maturing, which do not take place or do not take place to anything like the same degree in the patent spirit.

We have reproduced elsewhere the passages of the report which discuss the medical aspects of the controversy which has arisen between the patent and the pot distillers. As to any value attaching to whisky in the treatment of disease, the Commissioners express the opinion that no difference in the results obtained could be attributed to the modé of preparation of the whisky, by which we understand that they hold that its effects are entirely due to the ethylic alcohol. This conclusion seems a little in conflict with that contained in the following paragraph of the report, in which it is said that in its dietetic use flavour plays a part of considerable importance, that a maturer whisky is preferable for dietetic consumption to a new whisky, and that whiskies of different flavours may have a particular dietetic value in particular instances. The most important observation under this heading is perhaps that suggesting that patent-still whisky is a more deceptive beverage than the more highly-flavoured pot-still whisky, since the latter is likely to be drunk in a greater degree of dilution.

The Commissioners do not recommend any additional provisions for the protection of the consumer of whisky. They think that he gets what he asks for, or, rather, what he is willing to pay for; and that it is a case for the application of the old precept *caveat emptor*. The general conclusion of the report is a definition of whisky as a spirit obtained by distillation from a mash of cereal grain saccharified by the diastase of malt, Scotch whisky being whisky so distilled in Scotland, and Irish whisky being whisky so distilled in Ireland. What should be the name applied to the whisky distilled in the 8 distilleries of England we are not told. Possibly, as there are 150 distilleries in Scotland and 27 in England, the Commissioners considered it unnecessary to suggest a special term, although there must be a good deal of English whisky on the market, probably, however, mainly used for blending with the genuine Scotch or Irish product. It appears that at the present time two-thirds of all the whisky distilled in Scotland and Ireland are distilled in patent-stills; so that, taking this fact along with the public preference for blended whisky, the Commissioners appear to have had no alternative save to arrive at the definition quoted above, with the corollary that if whisky is to be used at all, then the most palatable is the best.

With regard to brandy, the Commissioners have no difficulty in adopting the view that it must be the distilled product of the grape with the addition of some cane-sugar and colouring matter. But it would appear that, unless the consumer takes advantage of the provisions of the French law and purchases brandy with a warranty, he cannot be sure that the liquid he obtains may not be made in whole or in part from the fermented product of apples, pears, cherries, plums, or other fruit. At the same time, wine suitable for the manufacture of brandy is now so cheap and plentiful in France, the country which supplies 94 per cent. of the brandy imported into the United Kingdom, that the probability of other materials being used is small. The only exception to its definition of brandy which the Commission would recognize is a spirit sold as British brandy, a compound prepared by a rectifier or compounder by redistilling grain spirit with flavouring ingredients, or by adding flavouring materials to such spirits. British brandy seems to be used chiefly for mixing with foreign, generally Cognac brandy, the mixture being sold at a cheap price as "cooking brandy."

The name of rum, the Commission considers, should be limited to a spirit distilled direct from sugar-cane products in sugar-cane growing countries, and it holds that the Customs should not afford facilities for mixing in bond Colonial rum with the imitation rum made principally in Germany and commonly called "Hamburg imitation rum."

Gin is made by adding the flavour of juniper and other herbs to plain flavourless grain spirit. Some makers of gin distil the juniper berries and flavouring herbs with the spirit; others distil the flavouring materials separately and add the product to the grain spirit. The Commissioners appear to consider either method legitimate. Geneva or Hollands is made from a mixed mash of malted barley, rye, and maize, distilled three times in a pot-still, and then redistilled with the addition of juniper berries and other flavouring.

As to liqueurs, the Commissioners frankly give the matter up. The methods of preparation are trade secrets, and the products have no defined alcoholic strength, the alcohol being merely a solvent for the flavouring essences. Liqueurs of the best quality, it is said, are generally made with old spirit, but the method of preparation differs; cherry brandy, for instance, is made by infusion, and crême de menthe, a liqueur apparently very popular with ladies, with an essence prepared from the leaves and top of *Mentha piperita*, while curaçoa and anisette can only be obtained by distillation. The Commissioners do not recommend any special restrictions on the labelling or sale of liqueurs or cordials, the name still, it is said, applied to British liqueurs, but they state that the sale of absinthe has been entirely prohibited in Switzerland, and can only be sold in France at a high alcoholic strength with a correspondingly small proportion of wormwood extract. Although this is pointed out, no suggestion is made for legislation, probably because the quantity of absinthe consumed in this country is very small.

In its concluding sentences the Commission recommends that in prosecutions under the Sale of Food and Drugs Act the presiding magistrate should be authorized to obtain the assistance of two assessors, and suggests that a committee of skilled persons might be formed under Government authority to advise on technical questions which affect the administration of the Act by local authorities and the practice of public analysts.

SECRET REMEDIES.

THE volume entitled *Secret Remedies: What They Cost and What They Contain*, which has just been published by the British Medical Association,[1] will, there can be no doubt, prove very useful to medical practitioners, who often find their patients taking nostrums, and are sometimes even asked to sanction their employment. The volume is based on analyses made for the British Medical Association and published from time to time in the BRITISH MEDICAL JOURNAL during the last few years. The secret remedies examined include the majority of the preparations commonly, but incorrectly, called patent medicines, which are at present being largely advertised in this country. They are classified in twenty chapters according to the kind of disorder for the cure of which each is more particularly vaunted. The claims made by some of the proprietors are so extensive that it has not always been easy to assign its proper place to the nostrum under examination, but the index of names and ingredients will facilitate reference. Probably the fact that will most strike a medical reader who turns over the pages of the volume will be the exceedingly commonplace nature of the ingredients in all or nearly all the nostrums examined. In some instances, indeed, it is difficult to see how the combination can have any medicinal action whatever unless it be on the principle expounded by the great inventor of Tono Bungay to his nephew, who had asked: "You don't "mean to say you think doing this stuff up in bottles "and swearing it's the quintessence of strength and "making poor devils buy it at that, is straight?" "Why not, George? How do we know it mayn't be "the quintessence to them so far as they're con- "cerned? There's Faith. You put Faith in 'em. . . . "I grant our labels are a bit emphatic. Christian "Science, really. No good setting people against the "medicine." The new volume may, indeed, be described as a kind of appendix to Tono Bungay, containing data justifying the picture which Mr. Wells has drawn with so much skill and humour of Uncle Ponderevo's proceedings in concocting and booming his "secret of vigour."

PROFESSOR PFLÜGER.

PFLÜGER, the doyen of German physiologists, has just celebrated his eightieth birthday, and although we are a little late, we join very heartily in the congratulations he is receiving. His vigour in research and in teaching appears to be unabated, and we sincerely hope he has still many years of useful work before him. Among the tributes of respect and affection he has received is the publication of a little pamphlet by his former pupil and now his colleague in Bonn University, Professor Nussbaum, *E. W. F. Pflüger, als Naturforschen*.[2] This gives a complete list of his publications, and an appreciative account of his work in connexion with the multifarious physiological subjects he has investigated in relation to histology, embryology, chemistry, metabolism, philosophy, psychology, and the nervous system. To the student of physiological textbooks, Pflüger is best known as the author of the law of contraction, and as the originator of sound views on the nature of protoplasm, and the part played by the living cell in metabolism. These, however, constitute but a small fraction of his many contributions to the progress of natural knowledge, for every subject he has taken up he has illuminated. His publications to date reach the number 199, stopping just short curiously enough of the second century, if we may borrow the phraseology of cricket. Like most cricketers, too, he is a good fighter, and his love of polemics is well illustrated in the list of his papers. No notice of Pflüger, however short, should omit to mention his celebrated *Archiv*, which has formed part and parcel of his life, and is now recognized as the standard physiological periodical in Germany. He founded this journal in 1868, and its 128th volume is now in course of publication. May it, like its author, long continue to flourish.

SANITATION IN WEST AFRICA.

PROFESSOR SIMPSON'S report on sanitary matters[1] in various West African colonies and the recent outbreak of plague on the Gold Coast, shows how far sanitation is behind the times in many of these places. There were in all 344 cases of plague on the Gold Coast, with 300 deaths. In the first outbreak there were 302 cases, 258 proving fatal; 127 deaths occurred in Accra and 131 in other parts of the colony. The cases at Accra were mainly of the bubonic type and were associated with a plague epizootic among rats, but the outbreak in the villages was, with the exception of 3 cases, entirely pneumonic, and with no mortality or infection of rats. In the second outbreak which lasted from early in May to June 26th, there were 35 cases of pneumonic plague in the colony, all of which were fatal; 23 of these occurred in Accra and 12 in the neighbouring villages. There was no rat infection connected with any of these. In the third outbreak, from July 28th to August 17th, there were 6 cases of plague in Accra, all pneumonic and fatal. The Indian Plague Commission was of opinion that pneumonic cases play a very small part in the spread of epidemics, but figures such as these show that such a view must be accepted with great caution. It is also difficult to understand what part fleas could have played in the third outbreak, since the 6 cases were all pneumonic in type and there was apparently no infection of rats. To deal with the sanitation of the coast generally Professor Simpson advocates the creation of a special health organization which would consist of (*a*) a special health department in each colony, small in its constituent numbers, whose members should be specially trained, and whose whole time should be devoted to public health duties; and (*b*) the medical officer in each station, who is now designated health officer for the station, but who at present has no special expert guidance or control in sanitary matters. Professor Simpson thinks that the suggested health department in each colony would be best formed by making it a branch of the West African Medical Staff under the charge of a sanitary commissioner with separate functions, the officers not being transferable. His views, which were put forward with succinctness and exhibited a wide grasp of all sides of a very intricate problem, were laid before the recent departmental Commission on the West African Medical Staff, and seem, for the most part, to have been adopted by it.

LINGUAL ANALGESIA IN TABES.

IN the review of Professor Grasset's work, *Le Tabes, maladie de la sensibilité profonde*, which appeared in the BRITISH MEDICAL JOURNAL of April 10th last,

[1] *Secret Remedies: What They Cost and What They Contain. Based on Analyses made for the British Medical Association.* London: The British Medical Association. 1909. (Cr. 8vo, pp. 214. To be obtained through any bookseller, price 1s., or from the offices of the Association, price 1s. 3d. post free.)

[2] *E. W. F. Pflüger, als Naturforschen.* Bonn: M. Hagar. 1909. (Roy. 8vo, pp. 40. M. 1.)

[1] *West Africa.* Report by Professor W. J. Simpson on Sanitary Matters in various West African Colonies and the Outbreak of Plague in the Gold Coast. Presented to Parliament by command of His Majesty, June, 1909. London: Printed for His Majesty's Stationery Office by Darling and Son, Ltd., 34-49, Bacon Street, E., and to be purchased, either directly or through any bookseller, from Wyman and Sons, Ltd., Fetter Lane, E.C., and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Tweedale Court, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin. 1909 (Cd. 4718. Price 2d.)

reference was made to anaesthesia, or rather analgesia, of the tongue as a sign of tabes dorsalis. Since that date we have been favoured with the copy of an article on "Lacrymal Reflexes: Pressure-sensibility of Head and Neck, and the Squeezed-tongue Sensation," by Dr. L. J. Kidd, which appeared in the *Review of Neurology and Psychology* for March, 1909. In this article Dr. Kidd writes that he has quite recently thought of applying diminution or loss of sensation of the tongue, on pressure, as a test for tabes dorsalis, especially in cases of the upper type; at the time of writing he had only applied the test to a single patient. In France, however, according to Professor Grasset, this sign of tabes has been recognized for some time; it was described in 1903 by Sicard and Carrez, and was present in 6 out of 16 tabetics, and to a minor degree in two more of them. Carrez concluded that this was a deep analgesia, in no way connected with any cutaneous anaesthesia of the corresponding superficies of the tongue. Professor Grasset, as was pointed out in the review of his book, is inclined to attribute this lingual deep analgesia to disorder of the sympathetic nervous system. Dr. Kidd discusses the question with some thoroughness, but without arriving at any very definite conclusion, although he is of opinion that the squeezed-tongue sensibility might show some diminution if there was a complete lesion of the twelfth cranial nerve, or if the lingual branch of the fifth were diseased.

TELEOLOGY.

As we meet with them and their exponents in this country, metaphysics and medicine, using the terms in their widest sense, have but little ground in common. Few of those who devote much time to the study of the one or to the practice of the other are in a position to combine the two, or to find a *modus vivendi* whereby the claims of each may be marked out and satisfied. No doubt this is because the British are before all a practical race by nature, apter for action than speculation, for experiment than theorizing, for applied and empirical science than philosophy. Very different is the state of affairs on the Continent, particularly, as everybody knows, in Germany, where a training in philosophical thought is as common among the educated classes as it is rare in England, and the writing of psychological or philosophical papers and metaphysical essays by the professors and teachers of every kind of science is a commonplace of daily—one might almost say of hourly—occurrence. There died in Frankfurt last summer one of the most promising of the younger generation of these gifted writers, a pathologist, Eugen Albrecht by name, in whom were combined the qualities of a man of science and of a philosopher to an unusual extent. Almost the last work of his own he lived to see through the press was on the subject of teleology and pathology, a brilliant piece of writing that should afford food for reflection to any of its readers. The craving for causality is so deeply implanted in the human mind, that any philosophical doctrine that offers to give "the reason why" in answer to any question, and will settle "the purpose" of any object or process submitted to its consideration, is sure to be widely welcomed. Such a doctrine is found in teleology; and, as Albrecht remarks, teleology has given rise to a vast amount of jejune and futile speculative writing, so simple it appears to be, so easily is its scope misunderstood. In the field of human pathology he would strictly limit the employment of teleology or "purpose" for the explanation of the processes that may be there observed. He points out that the so-called "purposive reactions" of the organism, such as the regeneration of injured tissues or the formation of antibodies, follow without variation along their own definite and rigid lines, frequently overstepping the limits of any possible utility. Once started, they tend to go on just so long as the stimulus that called them forth continues to be felt, quite irrespective of the "purpose"—the welfare of the organism—that is presumed to have first set them on foot. In a great many instances, too, reactions occur in which no useful purpose can be detected. While the majority of these appear to be indifferent, some to all seeming are positively harmful to the body as a whole, and all are called into action in response to some definite stimulus, and not to satisfy some "need" of the organism. Further, the human body shows no signs of adaptation, or of educational advance in the way of improvement or new combination, in the reaction called forth when the same stimulus is repeatedly applied. Want of space forbids us to go more deeply into Dr. Albrecht's well balanced and carefully reasoned exposition of the countless errors into which the goodwill and defective logic of many teleologists have led their possessors, or into the psychology and metaphysics of the position he himself adopts, or into the limits of human knowledge as he points them out. The problem that teleology sets out to explain, the "Everlasting Why," as Carlyle might have called it, is no more to be solved by attack from the side of pathology than from any other side. In ultimate analysis such problems must always be insoluble; and Dr. Albrecht's own carefully-worded reply to the questions so readily answered by the teleologists may, perhaps, be not unfairly summed up in the words *ignoramus, ignorabimus*.

A PREMIUM ON FECUNDITY.

The old age pension already weighs heavily upon the taxpayer, and, if the Labour party has its way, it will weigh still more heavily in the future. But there may be even worse in store for us. Is it possible that the taxpayer may yet be called upon to pay, not only for the maintenance of aged citizens, but for the making of new ones? Our population, like that of most other civilized peoples, tends to diminish, and, as Napoleon said, Providence is on the side of the big battalions. There was, doubtless, a good deal of malice in his reply to Madame de Stael when she asked him whom he considered the greatest woman that ever lived: "She who had most children"; but, in saying that, he gave utterance to a feeling which found expression in his customary injunction to ladies presented to him, *Faites moi des soldats!* It is certain that the nation which does not increase is doomed sooner or later to extinction. Nowhere is this more clearly perceived now than in France, the country in which the artificial limitation of the family has till lately been practised most extensively and openly. Now there are States in America where the practice is not only prevalent, but where it is preached as a duty which civilized woman owes to herself. For years past American observers have been warning their countrymen that the Anglo-Saxon element was slowly but surely being eliminated from the population of America. But when President Roosevelt in his strenuous way called attention to the evil he was violently denounced by many women. Although the latest returns in France show a slight recovery in the downward curve of births, the statesmen of that country continue to be alarmed at the steady decrease of the population. They have for years been seeking a remedy. It is a considerable time since a law was passed giving parents with seven children the right to have one of them educated at the expense of the State. This measure seems to have

had little or no effect; the figure of productivity is much too high, especially in a country like France where the gentle art of regulating the output of progeny has been carried to the highest perfection. Even the privileges granted by the *jus trium liberorum* when the Roman Empire was beginning to decay would probably be ineffective in France where two children are considered the utmost limit of prudent parentship. A measure much more likely to promote the fertility of marriage has recently been suggested by Professor Charles Richet, the distinguished physiologist. He suggests, in fact, that a premium should be placed on fecundity, the State giving £20 for a second child, and £40 for each further addition to the family. He estimates that the result of this measure would be an increase of births to a million to twelve hundred thousand instead of seven hundred and fifty thousand, which is the present rate. The cost is estimated at £12,000,000 for the first year, and the amount would rise with the number of births. In four years Professor Richet looks for an increase of a million in the population which he thinks would be cheaply purchased at the price of a *milliard*. He proposes to raise the money by loan, or by taxing estate inherited by collateral relatives to the amount of 50 per cent. or more, while a tax of 25 per cent. would be levied on that inherited by an only child. It is estimated that this would yield a sufficient amount to meet the sum required for the bonuses on offspring. Professor Richet concludes his proposal by an emphatic statement that a substantial premium given by the State for every child after the first is the only remedy for decrease of population. The scheme as presented by Professor Richet is seductive in its simplicity. But the eminent physiologist does not seem to have taken into account in his calculations the fact that, apart from artificial limitation, a higher degree of civilization entails a diminution of fertility. The increase of population which his bonuses would bring about would be to a large extent an increase of the less desirable elements, physical as well as intellectual and moral, of the community. In this country the poor are far more prolific than the well-to-do. We have no data about what we hope we may without offence call the predominant partner; but there seems reason to believe on the whole that the higher education of women has a tendency not only to unfit them for the duties of motherhood, but to deprive them of the capacity of becoming mothers.

VACCINATION IN VENEZUELA.

THE example of this country in relaxing the regulations requiring vaccination is not being followed in the Republic of Venezuela. Menaced by the perils of small-pox the authorities of that country are determined to profit by the results established by experience in other parts of the globe. Recently the President of Venezuela promulgated a decree which provides for a system of vaccination which is consistent with the almost universally admitted facts regarding vaccination in relation to small-pox. On page 430 some details of this decree are given, and it will be seen that every effort is about to be made to test the power of vaccination to stamp out and to keep out small-pox. The regulations as to revaccination are very complete and the penalties for non-observance are cumulative and severe. It will be noticed that the fines imposed are to be devoted to the development of the Institute of Vaccine. This is logical, for the vaccinated have to participate in providing the expense incurred through small-pox by those who have not complied with the regulations. The conscientious objector from these shores who wishes to enter Venezuela will have to stifle his conscience or find himself unable to disembark.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

THIS great national undertaking, the publication of the New or Oxford English Dictionary,[1] has reached another stage in its progress. With the present part a beginning is made with S's, the rubrics running from *S* to *Sauce*. There are so many medical terms between these termini that room can only be found for passing references to a few of them. Let us begin with two words which are often spelt erroneously, *sanatorium* and *sanitarium*. The former (*sanatorium*) is defined as an establishment for the reception and medical treatment of invalids; in recent use chiefly either of convalescent patients or of consumptives undergoing the open-air treatment. A quotation from a newspaper of the year 1899 says: "Quite a little shoal of companies for the establish-"ment of sanatoria has recently made its appear-"ance." A second definition is: "A place to which, "on account of favourable climatic and other con-"ditions, invalids resort for the improvement of "their health." To this definition an illustrative quotation from the *Pall Mall Gazette* of 1865 is added: "An English physician, who, as the "custom is, has taken one of the rising sanatoria on "the shores of the Mediterranean under his especial "patronage"; and the quotation illustrates more than the meaning of the term. It is to be noted that there is no such word as *sanatarium*. The second term is *sanitarium*, and it is used synonymously with *sanatorium* in both its ordinary meanings; the confusion has doubtless arisen by the first half of the one word being joined in common use with the second half of the synonymous term. In this connexion it is interesting to note that *sanity*, which of course comes from the same Latin root (*sanitas* and *sanare*) as sanitarium, at first meant simply health or a healthy condition without any special reference to mental health; that meaning, however, is now archaic. It is illustrated by the quotation (dated 1778): "His heart, "liver, entrails, and nutriment in each state bear "every mark of perfect sanity." *Sane*, as a transitive verb, meaning to cure or heal, is obsolete now in that sense, but was employed by Chaucer—for example, to "sane the vices of flesh and of the soul." A great many other words coming from *sanus*, *sanare*, and *sanitas* are placed, defined, and illustrated, but reference must be made to other parts of the Dictionary. The word *saphena* is very interesting. Dr. Bradley says: "The usual statement that the word is from the "Greek σαφηνής, 'manifest, clear,' is baseless. The "Greek word does not mean 'conspicuously visible,' "but is used only in intellectual senses." The correct derivation is the mediaeval Latin *saphena*, *sophona*, adaptation of the Arabic *cafin*, *saphena*; also "a vein lying deep in the arm" (Lane). The adjectives are *saphenal* and *saphenous*, but *saphenus* is erroneous. The medical term *sabulous* is not very commonly employed; it means sandy or granular—for example, certain secretions from the urinary organs are called sabulous; it is also applied to the gritty substance of the pineal body of the brain. It is derived from the Latin *sabulum*, sand; and from the cognate word *saburra*, sand, we have the term *saburra*, foul granular matter deposited in the body, especially in the stomach. *Saburration*, another

[1] *A New English Dictionary on Historical Principles.* Edited by Sir James A. H. Murray. *S—Sauce* (vol. viii). By Henry Bradley. Oxford: At the Clarendon Press; London, Edinburgh, Glasgow, New York, Toronto, and Melbourne: Henry Frowde. Double section, price 5s. July 1st, 1909.

medical term, means the application of heated sand to the body, sand-bathing, arenation. From *saccharum*, sugar, comes a long list of words—*saccharate*, *saccharic*, *saccharide*, *sacchariferous*, *saccharify*, *saccharimeter*, *saccharin* ("the intensely sweet substance "obtained from coal-tar, used in minute quantities "for sweetening the food or drink of persons to "whom sugar is injurious"), *saccharine*, *saccharinic*, *saccharo-* (in compound words), *saccharomyces*, etc. Among obsolete terms is *sacculus*, with its old meaning of a small bag containing medicaments, and not with its new one of a small sac or pouch-like dilatation of an organ. A great deal of old medical history can be read in the quotations which Dr. Bradley has chosen to illustrate the words *salivate*, *salivation*, and *salivative*. Another interesting group of words cluster round the Greek term for flesh—namely, *σάρξ*. There are *sarcine* (a base existing in the juice of flesh); *sarcoplasm* (the interfibrillar hyaline substance of muscle); *sarcocele* (a hard fleshy enlargement of the testicle); *sarcolemma* (the fine transparent tubular sheath investing muscular fibre); *sarcology* (the branch of anatomy which treats of the fleshy parts of the body, or, more recently, the therapeutic method or theory which involves or advocates the internal administration of the organs of animals for the purpose of affecting the corresponding organs of the human body); *sarcoma* (once simply a fleshy excrescence, now a tumour composed of embryonic connective tissue); *sarcoptes* (a genus of parasites, comprising the itch mite); and *sarcosine* (methyl-glycocoll). *Saturnine* has an interesting series of meanings: first, born under or affected by the planet Saturn; then sluggish or gloomy in temperament; then pertaining to lead; and, finally, caused by absorption of lead or suffering from lead poisoning (*saturnism*). Some very interesting terms belong to materia medica, such as *sassafras* and *sarsaparilla* (each with an interesting etymology), *sagapenum* (formerly used as an antispasmodic and emmenagogue), *sal-ammoniac*, *sal volatile* (volatile salt), *salicin* (from salix the willow), *salol*, *salipyrin* salicylate of antipyrin), and *sandal wood* or *sanders*. Related to pharmacy, also, is *salve*, which apparently has nothing to do with the Latin word meaning "be "in good health," but comes from the old English *scalf*, allied to the Albanian *galpe*, butter. It is impossible to exhaust the medical interest of this part of the Dictionary, but, as a last instance, we may refer to *salt rheum*, in this country an obsolete term meaning a running cold (as in Shakespeare's *Othello*, "a salt "and sorry Rhewme"), but in use now in the United States as "a popular name for almost all the non-"febrile cutaneous eruptions which are common "among adults, except perhaps ringworm and itch."

A CASE OF VIPER BITE.

ON August 5th, Dr. H. Peck, Medical Officer of Health for the Chesterfield District of Derbyshire, who had been testing water on Ramsley Moor for peaty acids, was struck on both hands by an adder, which he had mistaken for a harmless grass snake. He sucked the wound, but almost immediately began to feel very ill, vomited, and suffered from dyspnoea, attributed in part at least to swelling of the lips, tongue, and fauces. The sufferer was fortunately—for the accident happened at a considerable distance from any habitation—assisted by the Duke of Rutland's gamekeeper, and Dr. Edleston was summoned from Baslow. When he arrived, two hours and a half after the bites had been inflicted, Dr. Peck's condition was very alarming; he was in a state of extreme collapse, with an imperceptible pulse, and cyanosis especially marked in the face and head. Under immediate treatment by strychnine and digitalis and free stimulation, the condition slightly improved, but two days later was still serious, the right arm and the thoracic and abdominal parietes being the site of brawny oedematous swelling. On the next day the general and local symptoms had greatly diminished in severity and it was possible to give a favourable prognosis. We hope to publish fuller details of an accident which is fortunately very rare in this country. The snake, which was 23½ in. long, and therefore full grown, was, no doubt, the common adder or viper (*Vipera berus*), the only poisonous snake of Great Britain. It occurs in all parts of England and Scotland, but not in Ireland, Man, Guernsey, or Sark. It may be recognized[1] by the dark brown or zigzag mark which extends along the whole length of the back, and by a V-shaped marking at the posterior end of the head.

THE FIGHTING AT TEHERAN.

DR. JOSEPH SCOTT of Teheran, while a refugee in the British Legation during the fighting there last month, organized a temporary hospital in the Minister's coach-house. Fighting in the immediate neighbourhood was very severe, and the place was soon filled. The wounds for the most part involved the chest, abdomen, head, and thigh; the lower part of the body escaped, as much of the fighting took place from trenches. The bullets, which were of the Mauser variety, did not as a rule produce serious wounds, and only four cases proved fatal. One of these cases was a bullet wound of the liver, another of the abdomen, another of the lung which became complicated by pneumothorax, while the fourth was a penetrating bullet wound of the knee. In one case, that of a child, the bladder was traversed, but recovery ensued; in another of perforation of the stomach, milk which was swallowed returned through the wound. Although nearly all the wounded did well the tribesmen recovered more rapidly than others. For a time the life of the city was disorganized and the dead lay in the streets for several days, the bodies being in an advanced state of decomposition before they were removed. Probably the killed and wounded numbered about 500; but the exact facts will never be known, as many of the dead were thrown into the nearest pit or eaten by dogs.

SLEEPING SICKNESS.

DR. HEARSEY'S diary[2] of sleeping sickness (Part VII) in the Nyasaland Protectorate indicates that there are few cases of the disease there. North Nyasa, the most northerly district of the Protectorate, with a population of about 27,000 natives, has now been fairly thoroughly investigated, but no case of sleeping sickness has been found, notwithstanding that about half the inhabitants have been examined; *G. morsitans*, *G. pallidipes*, and *G. fusca* are the only species of tsetse that have been met with. Dr. Stannus, who has been deputed to investigate the Mombera and West Nyasa districts, recently found an advanced case (somnolent stage) on the coastal border of Marimba. How this case became infected is not quite clear as no others have been seen, and *G. morsitans* is the only tsetse fly so far discovered. Two cases are now interned in the sleeping sickness camp at Dowa, Central Angoniland, this being the district where the late Captain Hardy unfortunately contracted the malady himself. As regards North Eastern Rhodesia

[1] Dr. Gerald Leighton in *Encyclopaedia Medica*, vol. ii, p. 255.

[2] *Nyasaland Protectorate—Sleeping Sickness. Diary.* Part VII. By the Principal Medical Officer. Zomba: Printed by the Government Printer. 1909.

things are not quite so hopeful. *G. palpalis* extends practically in an unbroken line all along the Luapala river, and Dr. Storr thinks that his efforts will be in vain as long as the lack of co-operation and indifference which obtains on the part of the Belgian authorities continues. This is a serious matter and the Home Government might well communicate with the Belgian Government on the subject.

THE WILLIAM MITCHELL BANKS MEMORIAL LECTURE.

THE fifth William Mitchell Banks Memorial Lecture was delivered in the University of Liverpool by Dr. Harvey Cushing of the Johns Hopkins University on August 4th. The lecturer related recent observations on the pathology and surgical treatment of intracranial tumour, and referred in particular to the results of palliative and radical operations performed during the previous ten months on 64 cases. In discussing the symptoms he drew particular attention to the alterations in the fields of vision and of colour vision as among the earliest observable phenomena. In dealing with the morbid anatomy he went into detail regarding the experimental work which had been done to demonstrate the functions of the pituitary body, and pointed out that over-action was associated with acromegaly, and under-action with a characteristic form of obesity and sexual infantilism. He described a case of removal of the pituitary body from an acromegalic. Before concluding his lecture he demonstrated by numerous lantern illustrations the methods of operative technique employed in his clinic. The lecture was closely followed and much appreciated by a numerous audience of medical men, and at the close their thanks were accorded to the lecturer by the Dean of the Medical Faculty, who presided.

THE BARNATO BEQUEST.

THE trustees appointed by the late Mr. Harry Barnato have resolved to devote the sum of a quarter of a million sterling, left by him for the purpose of founding some charity in the nature of a hospital or kindred institution in commemoration of his brother and nephew, to the building and endowment of an institution for the reception of patients suffering from cancer. The institution will be administered, except as regards its finances, in connexion with the Middlesex Hospital, and a suitable site has been acquired in Nassau Street adjoining the hospital's special cancer wards. It is stated that the new building will probably provide for about fifty patients and that clinical laboratories will be established. The scheme would appear to be an extension of the work already carried on at the Middlesex Hospital both in the special cancer ward and in the laboratories.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Registration of Nurses.—Mr. Field asked the First Lord of the Treasury whether he was aware that at the recent International Congress of Nurses, held in London, it was shown that many of the leading European and United States Governments had passed legislation for the registration of nurses; and, whether, in view of the fact that the majority of nurses and the volume of medical opinion in Great Britain and Ireland was in favour of similar legislation in the three kingdoms, the Government would introduce a bill on the subject. Mr. Field further asked whether the Irish Committee of the British Medical Association, at its recent meeting in Belfast, passed a resolution approving of the principle of State registration of nurses, with certain provisions; and whether, in view of this professional opinion, the Government would take measures to carry it into effect. The Prime Minister, in reply, said he could only repeat what he had said on a previous occasion with regard to the question of the State registration of nurses, that the Government would consider any representations that might be made on the subject. There was considerable diversity of opinion on this question amongst those qualified to judge; and in those circumstances he could not give any undertaking to introduce legislation.

Inebriates.—Mr. Charles Roberts asked the Secretary of State for the Home Department if it is intended to introduce the measure amending the law in regard to inebriates promised in the King's Speech. Mr. Gladstone said that they feared there was now no possibility of carrying legislation on this subject during the present session, and he did not think that in these circumstances it was desirable to introduce the bill. In reply to a further question by Mr. Roberts, Mr. Gladstone said he was open to argument, but he thought the balance of probability was against the introduction of a bill next session.

Pupil Teachers and Vaccination.—Mr. T. F. Richards asked the President of the Board of Education whether his attention had been called to the case of a Willesden pupil teacher whose father has a conscientious objection to vaccination, and who has been trained in the Middlesex County Council College without vaccination being imposed upon him; whether he is aware that this young man's retention as a teacher depends upon his submitting to this operation; whether he can take such action as will allow this pupil teacher the full rights of citizenship as enjoyed by persons not employed by public authorities; and what action he intends to take in the matter. Mr. Runciman said he was not aware of the case referred to. He might point out, however, that although the Board of Education did not require as a condition of their recognition that teachers should be vaccinated in cases where they had made a declaration of conscientious objection to vaccination, it was open to local education authorities to make vaccination a condition of appointment. He would suggest that the teacher in question should endeavour to obtain an appointment under an authority where this condition was not laid down.

Vaccination of Workhouse School Children.—Sir Maurice Levy asked the President of the Local Government Board whether the authorities of the Chase Farm Workhouse School had discontinued the practice of vaccinating children placed under their charge whose parents were opposed to vaccination. Mr. Burns, in reply, said he was informed that the guardians now obtained the consent of parents before children in the Chase Farm Schools were vaccinated.

Hanwell Ophthalmic Schools.—Lord Edmund Talbot asked the President of the Local Government Board if he had sanctioned a scheme whereby the managers of the West London school district would lease from the managers of the Central London school district the old ophthalmic schools at Hanwell, the buildings to be certified for the accommodation of from 300 to 400 young children of from 3 to 7 years of age, thus making a total of over 1,100 children reared on one site; whether such a scheme was in direct opposition to the recommendations of the Departmental Committee of 1896 that Poor Law schools be not enlarged and that the numbers for which they are at present certified be considerably reduced, and to the pledges repeatedly given by the Department that the certificates of existing schools should not be increased, and also to the recommendations of the Poor Law Commission that further provision of large institutions for children would not be made; and whether, if the consent of the Local Government Board had not been given to such a scheme, he would advise the school managers

concerned to provide other and more suitable accommodation for the young children in their care. The President of the Local Government Board, in reply, said that negotiations were pending between the managers of the two school districts with the object stated in the question. The building referred to was on ground belonging to the managers of the Central London School District. It adjoined the schools, but was entirely separate from them, and under the arrangement contemplated it would in no sense form part of these schools, but would be under entirely distinct administration by a different body. The scheme did not appear to be inconsistent with the recommendations of either the Departmental Committee of 1896 or of the Poor Law Commission, or with the pledges given by his department, and he saw no objection to it. Lord Edmund Talbot further inquired how many children would be accommodated in the schools. Mr. Burns said about 300, and the area of the ground was 11 acres.

Traffic in Old Horses.—Captain Faber asked whether the Board of Agriculture was going to take any further steps to suppress the traffic in old horses, either by the appointment of a special inspector or otherwise. Mr. J. H. Whitley said the Board had appointed a veterinary inspector to give his whole time to the supervision of this traffic, and to take such steps as might be necessary to secure the enforcement of the Order of the Board of Agriculture by the local authorities concerned. In reply to an inquiry by Mr. Arthur Lee, Mr. Whitley said that he thought one inspector would be sufficient. Captain Faber, on a subsequent date, inquired what steps, if any, foreign Governments had taken relative to the prevention of cruelty in the export of old horses from this country to foreign shores. Sir Edward Strachey replied that the export trade in old horses abroad from this country was practically confined to Holland and Belgium. The regulations in force in the former country required generally that horses landed there for slaughter were to be moved under veterinary and police supervision to slaughter-houses at the port, or, in specially authorized cases, elsewhere, and there slaughtered within eight days of arrival. The regulations in Belgium required the veterinary examination of all horses and the marking of those intended for food, which must be slaughtered at authorized slaughter-houses within eight days of arrival.

Dr. Lalcaca's Heroism.—Mr. Keir Hardie asked whether it was intended by the Government to in any way recognize the heroism of the late Dr. Lalcaca, who sacrificed his life in an effort to save that of Sir W. Curzon Wyllie. The Under Secretary for India asked that the question might be repeated at a future date, as the matter was under consideration. In reply to a subsequent question by Mr. Hardie, the Master of Elibank stated that the Secretary of State had considered whether the particular circumstances of the case were such that appreciation could appropriately be marked by a money grant; but, learning from the Government of India that Dr. Lalcaca was unmarried and that his surviving relatives were well to do, he felt that it was not necessary to take action in that direction. Sir G. Parker inquired whether the Government had communicated with the relatives of Dr. Lalcaca, expressing appreciation on behalf of the Government and the people of this country. The Master of Elibank said he was not able to say whether any specific representation had been made to the family itself. He would convey the hon. member's views to the Secretary of State.

Civil Surgeons in India.—Mr. Jeremiah MacVeagh asked the Under Secretary of State for India whether he was aware that the civil surgeons in India were usually military doctors belonging to the Indian Medical Service, and that their duties were very light, and left them ample time for private practice; whether the same work was done in the native states by doctors who did not belong to the Indian Medical Service at a much less cost and to the entire satisfaction of the Government and the public; and whether he could say when he would introduce his proposed scheme for the reform of the medical service of India. The Master of Elibank said the hon. member was correct in stating that the civil surgeons in India were usually officers of the Indian Medical Service. The Secretary of State had no detailed information as to the amount of time which they were able to spare from their official duties for private practice, nor was anything known as to the work of medical practitioners in native states. The Secretary of State was still in communication with the Government of India in regard to the best means of promoting the growth of an independent medical profession in India.

Indian Medical Service.—Mr. Ramsay Macdonald asked the Under Secretary for India whether Captain James had recently been appointed statistical officer in the sanitary department of the Indian Medical Service; and, if so, what qualifications were considered by virtue of which Captain James received his appointment. The Master of Elibank, in reply, said that Captain James had held the office in question continuously since February, 1907. His scientific qualifications were of a high order. He was associated with the Royal Society Malaria Commission, and was the author of valuable reports on tropical diseases and of a textbook on malarial fevers.

Cholera Deaths, Calcutta.—Mr. Rees asked whether the Government of Bengal had instituted inquiries into the ten deaths reported of cholera in the Presidency European Hospital, Calcutta; whether it had determined whether the deaths were due to cholera, ptomaine poisoning, or other causes; and, if such inquiries had not been instituted, would the Government have them made? The Master of Elibank said that an inquiry had been instituted and was still pending. The report of Mr. Haffkine, Government bacteriologist, was awaited.

Egyptian Sanitary Service.—Mr. Ramsay Macdonald asked the Secretary of State for Foreign Affairs whether any steps had been taken to reinstate Dr. H. C. Ross, of the Egyptian Sanitary Service, and to fulfil the understanding come to between Sir Horace Pinching and Dr. Ross, before the latter left the naval service, that he should receive a regular appointment upon the permanent staff of the Egyptian Sanitary Service. The Under Secretary for Foreign Affairs said that as the post occupied by Dr. H. C. Ross was only a temporary one there could be no question of reinstating him. He had already explained in answer to a question from the hon. member on May 25th last that Sir Horace Pinching's successor did not feel justified in giving Dr. Ross a permanent appointment and that His Majesty's Goverment had no ground for interference with his decision. Mr. Ramsay Macdonald further asked if he was to understand that the Foreign Office denied that Sir Horace Pinching was one of their officers and made an agreement with Dr. Ross. Mr. McKinnon Wood replied that Sir H. Pinching was in the service of the Government of Egypt.

Shoreditch Infirmary (Lunatic Wards).—Mr. Cooper asked the President of the Local Government Board whether his attention had been drawn to the report of the inquest on William Cornish, who died in the insane ward of the Shoreditch Infirmary; whether he could state what were the duties of the night attendant and the number of patients in his charge; and whether he had had any training qualifying him for this position. Mr. Burns said that the duties of the night attendant referred to were to attend to the two lunatic wards. These wards had accommodation for thirty-two beds. One of them contained seventeen beds for epileptic and convalescent patients who could attend to themselves, except when they had fits. The work in the other varied considerably, and, when necessary, additional assistance was engaged. The night attendant had held his office since June, 1899, prior to which date he had experience in a county asylum.

Medicinal Spirits.—Sir Clement Hill asked the Chancellor of the Exchequer whether he could see his way to exempt spirits used for medicinal purposes only from the extra duty proposed by the Finance Bill. Mr. Lloyd George referred the hon. member to the reply which he gave on June 16th (British Medical Journal, June 26th, p. 1567).

Ireland.

[From Our Special Correspondents.]

Compulsory Notification of Tuberculosis in Dublin.

A special meeting of the Dublin City Council was held on August 9th to consider a motion, of which notice had been given, making tuberculosis of the lung a notifiable disease in the area of the County of Dublin from October 1st next.

Alderman Kelly, who proposed the resolution, said that Dublin was in the unenviable position of having the highest death-rate from consumption. Last year (1908) there were registered in Dublin 130 deaths from measles; small-pox, which was a notifiable disease, none; scarlet fever 13, typhus 3, whooping-cough 75, diarrhoeal diseases 275, typhoid fever (notifiable) 47, diphtheria (notifiable) 35, cerebro-spinal diseases 34, and consumption (which was not notifiable) 956. And these last-named were chiefly among the working classes. He was aware that there had been going on lately a great deal of letter writing on the subject, and he would not refer further to it. The Council had already adopted a recommendation to expend £200 in the provision of rooms wherein consumptive patients might be treated for a period. That consumption could be cured was certain; that it was preventable was equally certain, and if the public health authority did not adopt the proper method for prevention and cure they were only losing their time. He undertook that the notification would be carried out in such a manner as to give rise to no publicity.

Mr. Crozier seconded.

Alderman McWalter, M.D., opposed the motion. He held that this notification would hit the poor cruelly, as a man who was not supplied with a bed would be practically thrown out of employment. He suggested that they should wait until the completion of the municipal sanatorium. Alderman Kelly had no authority to say that the list would be kept secret, for the law said the list would only be kept secret so far as the public good was concerned. Only a few centres in England had adopted compulsory notification, and even then it was in places where particular kinds of manufacture were carried on.

Mr. Sherlock moved as an amendment that the question should be postponed pending a report from the Public Health Committee giving full details as to the action that would be taken to provide for patients after notification.

Mr. Quaid seconded the amendment.

After some discussion the motion was carried by 20 to 10.

In anticipation of the consideration of this question by the Dublin Corporation, Lady Aberdeen on Saturday addressed a letter on the subject to Sir Charles Cameron; in the course of it she said:

As the question of how it will be possible to properly treat the cases if notified is sure to come up, I think I ought to give you officially the following information:—Mr. Robert J. Collier has intimated to the Women's National Health Association of Ireland his intention of putting £1,000 a year for five years at their disposal in order that a tuberculosis dispensary may be founded as a memorial to his late father, Mr. P. F. Collier. The Women's National Health Association hope that they may be able to carry out the trust thus committed to them in close co-operation with the work which the Public Health Committee and the Corporation are proposing to do for the relief and prevention of consumption in Dublin. The Women's National Health Association Committee will be prepared to extend its work of home treatment in conjunction with the efforts which the Public Health Committee is sure to make in the same direction pending the time when the new sanatorium will be ready.

In a letter to the press Dr. McWalter says:

The Irish death-rate from consumption is now the lowest in the world, having regard to the fact that the emigration since 1864 is equivalent to our present population of 4½ millions, and that as no consumptive emigrants were allowed to land in America, whilst any who went to England or Scotland were sent back to die in our workhouses, the present nominal death-rate from consumption must be corrected to exactly one-half, because it is the consumption death-rate of nine millions.

A rough-and-ready test which shows our comparative freedom from consumption is this: The number of persons who die of pulmonary consumption in Ireland each year is about 10,000. The number of persons over 70 years of age is over 200,000. There is no other country in the world where the death-rate from consumption is only a twentieth of the population over 70 years of age. In New York it is calculated to be about one-fifth.

The suggestion that Ireland is a consumptive country constitutes the most stupendous libel of modern times.

Hundreds of children die in Dublin every year from whooping-cough and measles—thousands die from bronchitis, the direct result of these diseases—but neither of them are notifiable, though notification would do nobody any harm, and with proper isolation and disinfection they might be wiped out of the city. If the Public Health Department are content to look on helplessly at hundreds of lives being lost from these preventable diseases, why should it be so anxious to enforce a tyranny on our consumptive citizens greater than exists in the most disease-ridden cities of the world?

Home for Tuberculous Patients.

The opposition to the use, by the Women's National Health Association, Dublin, of the disused coastguard buildings at Sutton Howth for tuberculous patients has been successful. Lady Aberdeen has informed Mr. Calverwell, one of the opposing residents, that the Sutton Health Home will in future be called the Sutton Holiday Home, and is to be used for persons who may be in a weakly state of health, or who may have been living under conditions which might predispose to the disease, but who will probably be "set up" by a few weeks' rest, and good air and good food, and that it will not be used for patients suffering from tuberculosis in any form.

Scotland.

[From our Special Correspondent.]

Health Conditions of Edinburgh.

The Medical Officer of Health for Edinburgh, in his annual report on the health of that city, states that the most striking and most important fact which first arrests attention is in regard to the general death-rate, which has during the year fallen to the lowest figure yet recorded—13.37 per 1,000 of the population. The special efforts which have been initiated in order to effect a reduction in the infantile mortality-rate have been attended with a considerable amount of success. The first step towards the attainment of this object was reached when the Notification of Births Act came into force. The next step was the important one of appointing a lady health visitor, and this was followed by the inauguration of the specially satisfactory efforts which are now being carried out by the large body of lady health visitors, who are carrying on so splendid a work in the visitation of all newly-born infants in the poorer districts of the city. The infantile mortality ten years ago was 147 per 1,000 compared with 121 last year.

Notifications of infectious disease during the year were rather beyond the average, due largely to an outbreak of scarlet fever. Another record has been attained in the case of enteric fever, and this disease, indeed, may safely be regarded in the light of a vanishing quantity; 55 cases occurred during the past year, compared with an average of 178 during the preceding five years. The inference to be drawn in connexion with these figures is that the sanitary administration of the city has considerably improved.

The compulsory notification of phthisis is being carried out in a most harmonious manner, both as regards the medical profession and citizens generally. The accommodation set apart at the City Hospital for the treatment of advanced cases of phthisis has been taken advantage of so fully that it has been decided to procure six open-air shelters, which will be located in the grounds close to the phthisis pavilions.

England and Wales.

[From our Special Correspondents.]

MANCHESTER AND DISTRICT.

Voluntary Hospitals and the Poor Law.

It is evident that the co-ordination of charitable hospitals and the Poor Law medical service will not be easily attained under present conditions. There is no doubt that there exists in Manchester and Salford the same "extraordinary antagonism" between voluntary hospitals and

the Poor Law as Miss Norah Roberts in her report to the Poor Law Commission found to exist in London. On several recent occasions the Salford Guardians have passed what amount to votes of censure on the Salford Royal Hospital for its treatment of patients for which the hospital thought the guardians ought to be responsible. A similar antagonism recently manifested itself on the part of some of the Chorlton Guardians towards the principal charitable hospitals of Manchester. A proposal was made that the annual subscription of the guardians to the Hulme Dispensary should be raised from 5 to 10 guineas and that to Ancoats Hospital from 10 to 15 guineas. The question of renewing the subscription to St. Mary's Hospitals had been left in abeyance because the hospital authorities refused to take cases from Gorton, and seeing that Gorton was part of the union the guardians did not think the ratepayers ought to contribute unless they got some return. One of the lady guardians proposed as an amendment that the list be referred back, and she said that whether these charities were good or bad she did not think public money should be given towards the upkeep of institutions over which the guardians, as public representatives, had no control. These charities, she said, including the Royal Infirmary, were not freely open to the destitute, for as soon as it was found that a patient could not pay he was sent to the Poor Law Union's hospital. Another guardian, who is a medical man, said that from his personal knowledge he was aware that those who were called the destitute poor rarely received any benefit from these charities. After some discussion the amendment was defeated and the list adopted. Two questions, however, still remain to be faced—first, ought the subscription to a charitable hospital by a board of guardians to entitle the guardians to some control in the management of the hospital? and, secondly, is the subscription to be regarded as an exact *quid pro quo?* It has been shown that in London at least 38 per cent. of the persons receiving treatment at the London general hospitals are similar in class to those receiving Poor Law medical assistance, and 11 per cent of the out-patients are actually Poor Law cases. If anything like this is true for Manchester (and there is no ground for considering Manchester different from London in this respect), then it has been argued that the subscription from the guardians is only a fraction of what it ought to be, and the amount given to the Ancoats Hospital ought to be trebled or quadrupled. But underlying this argument there is the assumption that charitable hospitals ought not to be expected to do any of the work that falls to the lot of guardians, and this assumption is itself open to doubt. As matters stand, however, the hospitals are in a position to do as they like; they can either treat or refuse to treat pauper patients at their discretion. On the one hand, the hospitals are wofully short of funds, and cannot stand the strain of treating freely large numbers of in-patients for whom the guardians are legally responsible. On the other hand, the guardians are eager to save the rates, and from that standpoint may hold that they are justified in demanding at least some return commensurate with any subscription from public money. The worst solution would be the needless and wasteful multiplication of Poor Law infirmaries, when, by proper arrangement and by the prevention of abuse, the present charitable hospitals might be found sufficient to deal with at any rate most of the acute and special cases needing indoor treatment, leaving the chronic cases not requiring special equipment to the Poor Law infirmaries. But until some co-ordinating machinery is adopted, such as might be attained under the Public Assistance Authority suggested by the Majority Report of the Poor Law Commission, there is little hope of anything except a continuance of the present miserable antagonism.

INFECTIOUS DISEASE AT STOCKPORT.

The annual report of the medical officer of health for Stockport states that there have been 574 cases of scarlet fever notified in the town during the year. "It is difficult to account for the very remarkable prevalence of this disease during this year. It has been shared with many other towns, and it is possible that the climatic conditions were favourable to its spread." There can be little doubt that the type of the disease has of late years become milder, and probably a number of cases are on this account overlooked and cause further spread of the disease. In fact, comparing Stockport with other towns, it would seem that the number of cases is almost in direct proportion to the mildness of the cases. The isolation hospital has been frequently overcrowded, and the medical officer of health has pointed out to the Health Committee the failure of the hospital to deal adequately with cases of infectious diseases in the borough. A scheme for extension is now under consideration. Some time ago a case of small-pox occurred which could only be attributed to infected cotton. It appears that in the process of manufacture the strands of cotton frequently break, and the operatives are accustomed to moisten their fingers with saliva, and to roll the broken ends together to piece them. Thus any infection clinging to the cotton may be carried directly to the mouth, and though the time that elapses between the gathering of the cotton when it is supposed to be infected, and the handling in the carding room or spinning room is probably sufficient to reduce the infectivity to a minimum, it must be distinctly dangerous to introduce it directly into the mouth of a susceptible person. Considering the careful guarding against infection during the gathering and importation, the attenuation that must occur, and the improbability that the strand should break just where the infection is present, the chances of any spread of small-pox by this means must be extremely slight. It is suggested that the operatives should dip their hands in a mixture of glycerine and water, the hygroscopic nature of which would keep the fingers moist, and prevent the need for moistening them with saliva. The most certain safeguard would of course be revaccination of every person engaged in the cotton mill.

DR. ASHBY MEMORIAL SCHOLARSHIP.

The scientific work of the late Dr. Ashby in diseases of children gained him a very eminent position as a children's specialist. For years he was lecturer in diseases of children at the Manchester University and Physician to the Children's Hospital, and he came to be regarded by the public bodies of Manchester as the principal authority on everything affecting the health of children. His untiring and unselfish interest in all public movements for bettering the lot of city children deserve to be permanently remembered. It is, therefore, peculiarly fitting that a number of his friends have just subscribed a fund of about £1,000 for instituting an Ashby memorial research scholarship in the Manchester University. The scholarship will be of the value of £100, and will be offered next year and be awarded every three years. It will be open to qualified medical men or women, and the scholar will be required to undertake research in the subject of diseases of children. A special committee of electors will award the scholarship, and the subject will be announced in March of the year of award.

ST. JOHN AMBULANCE ASSOCIATION.

The following notice recently appeared in the *London Gazette:*

Grand Priory of the Order of the Hospital of St. John of Jerusalem in England.—The King has been graciously pleased to sanction the following appointment to the Order of the Hospital of St. John of Jerusalem in England: Frederic Hibbert Westmacott, F.R.C.S., to be Knight of Grace (from Honorary Associate). Dated July 31st, 1909.

The service of Dr. Westmacott, who was made an Honorary Associate of the Order in 1903, for the St. John Ambulance Association has extended over a period of nearly twenty years as lecturer and examiner. He is a Major in the Territorial Royal Army Medical Corps, and is Honorary Treasurer of the Manchester Centre of the St. John Ambulance Association, of which the Dean of Manchester is President and Surgeon-Major Darwin Chairman.

WALES.

WEST WALES SANATORIUM.

AT the adjourned annual meeting of the governors of the West Wales Sanatorium, held at Carmarthen on July 30th, the Treasurer reported the receipt of £40 for a bed at the sanatorium from the Aberystwith Council, the only one in the three counties that had not previously come into line. A sum of £150 would shortly be received from the

Carmarthenshire County Council. The report of the Executive Committee stated that the sanatorium maintained its full efficiency, with accumulating evidence of the benefits conferred upon the three counties, and of the warm appreciation of the patients. It was gratifying to have the assurance of the district collectors that the necessary funds were forthcoming again this year, and that the full amount was a certainty. The committee deserved the support of all benefit societies, such as the Oddfellows and Foresters and railway companies, to whose funds the matter was of vital importance. The estimated expenditure was £1,500, whilst the actual cost had been £1,491 9s. 9d. With the full agreement of the medical superintendent, it was considered that the services of a matron might well be dispensed with. The sanatorium was full, and there were numbers awaiting admission. The 20 or 22 beds now available were inadequate to meet the demand, and the earnest consideration of the governors must be given to the question whether the time had not arrived for a realization of the original intention of providing 40 beds for the three counties. The committee expressed its high appreciation of the able services of Dr. Adams, the medical superintendent. The physical results obtained and the admirable spirit prevailing were high testimony to the services of the staff. It was with profound regret that the committee heard of the impending departure of Dr. Adams to take up a more responsible position in Westmorland. Mrs. Davies Evans, Highmead, had in hand about £300, which she had collected, and a cheque for £200 was expected from another source soon; there was thus a nucleus of £500. It was decided to call a meeting of the executive committee to consider the question of providing more beds. The medical superintendent, Dr. Adams, submitted his report for the six months ending June 30th. Commenting on the steady progress made with the work, he stated that on December 31st, 1908, there were 20 patients undergoing treatment, and from the end of May last the sanatorium had been quite full. On June 30th the actual number undergoing treatment was 20. Since January 1st 29 patients had been admitted, 14 from Carmarthenshire, 7 from Cardiganshire, and 6 from Pembrokeshire, in addition to two private patients. With regard to the 30 patients who had been discharged during the same period the results were more than satisfactory. They were infinitely better than he, in the most sanguine mood, ever anticipated. Half of them were back at the work which they were doing before they broke down in health, 8 acting on his advice had changed their occupation, whilst there were three who were quite fit to work, but were not obliged to do so. One patient had died of a complication after leaving the sanatorium, and the other three were discharged as unsuitable cases, and were now practising at home the treatment they learnt at the institution. He was glad to report that not nearly so many hopeless cases were being recommended for treatment, and the importance of only sending early cases was being better realized. The report was unanimously adopted. On the motion of the treasurer two committees were formed in order to see, among other things, that discharged patients followed up the treatment they had received at the sanatorium.

Correspondence.

THE KINAESTHETIC AREA OF THE BRAIN.

SIR,—I have read with great interest Sir Victor Horsley's masterly and philosophical Linacre Lecture on "The So-called Motor Area of the Brain," in the BRITISH MEDICAL JOURNAL of July 17th, in which he brings forward good evidence for settling many long-disputed points concerning the functions of this region of the brain, and adduces both experimental and clinical evidence in support of the contention definitely formulated by me in 1886 that this region of the brain, instead of being a motor region, is in fact a sensory region for the registration of all the sensations resulting from movements of the limbs—a kinaesthetic area, in short, intimately concerned with the production of voluntary movements.

His own independent researches, carried on through so many years, so fully support my position that I only find myself at variance with him on a question of interpretation, which is, nevertheless, as I hold, one of considerable importance. I am the more impelled to call attention to this difference, because it is one which he and some others (including the writer of your leading article on p. 166) do not appear to recognize.

The following quotation from the lecture (p. 125) will help to show the nature of the difference between us:

> It is also time that yet another protest should be raised against the expression "motor area," as untrue scientifically, and, like many unfortunately convenient expressions, so misleading as to hamper the progress of knowledge. . . . Dr. Bastian's much more logical expression, "kinaesthetic area," has, unfortunately, not found general adoption, and yet none better expresses the fact that there is no such thing as a purely motor centre in the cortex cerebri, the whole structure being, in Dr. Hughlings Jackson's language, sensori-motor, or a combined mechanism for the record and execution of afferent and efferent nerve impulses.

Now, I do not at all agree that the kinaesthetic area is a "sensori-motor" area. It is, as I believe, a purely sensory area, and, as I contended in 1880,[1] it is a fundamental misconception to suppose, with Dr. Ferrier and others, in reference to cortical centres, that those "immediately concerned in effecting volitional movements" are "as such truly motor."

And how far I am from regarding the area of the brain in question as a sensori-motor region may be gathered from the fact that I have repeatedly expressed the view, first enunciated in 1880, that no motor centres exist in the cerebral cortex, as the following quotation will show[2]:

> The cerebral cortex is, in our view, to be regarded as a continuous aggregation of interlaced "centres," towards which ingoing impressions of all kinds converge from various parts of the body: here they come into relation with one another in various ways and conjointly give rise to nerve actions which have for their subjective correlatives all the sensations and perceptions, all the intellectual and all the emotional processes which the individual is capable of experiencing. From these terminal and complexly related "end stations" for ingoing currents and from certain annexes in connection therewith, outgoing currents issue, which rouse in definite ways the activity of the highest "motor centres" (the corpora striata and cerebellum) and through them evoke the properly adjusted activity of lower motor combinations, so as to give rise to any movements that are "desired" [willed], or which are accustomed to appear in response to particular sensations or ideas.
>
> The plan on which nerve centres generally are constructed, of whatsoever grade, makes it essential that the stimulus which awakens the activity of a "motor" ganglion or centre shall come to it through connecting fibres from a sensory ganglion, centre, or knot of cells—that is, from cells which stand in immediate relation with ingoing fibres.

The view expressed in the latter paragraph is a very different thing from saying, with Hughlings Jackson and with Victor Horsley (p. 126), that "every centre in the nervous system must be sensori-motor." Put in that bald way the statement seems to me to be distinctly misleading. If it is meant that a sensory centre never exists which is not in relation with a motor centre, and that a motor centre never exists without being in connexion with a sensory centre, I entirely agree; but to say that every centre must be sensori-motor tends, I submit, to convey an erroneous impression, because the separate components of the couple may be not contiguous or so as in effect to form one centre; the sensory and the motor parts of the functional couple may be, and often are, wholly separate and comparatively remote from one another, though connected by internuncial fibres—for instance, the sensory in the cerebral cortex and the motor in the spinal cord.

My view is, therefore, that the outgoing fibres which issue from the great ganglion cells or from smaller cells in the pre-central gyrus (that is, from this portion of the kinaesthetic centre) are simply internuncial fibres for the conveyance of appropriate stimuli to true motor centres lower down in the brain and in the spinal cord. The view that the actual nervous mechanisms for the production of co-ordinated movements are situated in the bulb and in the spinal cord, originally expressed by Volkmann and Müller about 1844, has been lately confirmed by Sherrington. This same view was, even last year, supported by Beevor in a valuable communication to *The Journal of the American Medical Association* (vol. li, pp. 89-95) in which he came to the conclusion that "all the evidence is in favour of the linkage of the ultimate constituents of a movement being in the spinal cord."

[1] *The Brain as an Organ of Mind*, pp. 581-600.
[2] Loc. cit., p. 584.

As I said in 1880,[3] it is possible "to explain the results of irritation and destruction of certain fronto-parietal areas of grey matter and of the white matter intervening between them and the corpora striata,[4] without in the least countenancing the supposition that 'motor centres' exist in the cerebral convolutions."

We have here, in fact, to do with a misconception very similar in kind to that which previously led Foville and others to regard the cerebellum as a sensory organ simply because "internuncial fibres" enter it from various sensory nuclei or ganglia. To argue that groups of cells have motor functions merely because stimuli issuing from them evoke movements when they impinge upon motor ganglia, is quite on a par with the argument that an organ has sensory functions because fibres come to it from sensory cells.

I had previously ("On the Muscular Sense," BRITISH MEDICAL JOURNAL, 1869) dealt with the question of the nature of volitional incitations and their relation to the nervous mechanisms in the spinal cord for the actual production of habitual and automatic movements. Such questions were discussed again in my work, *Paralyses, Cerebral, Bulbar and Spinal* (1886, pp. 108-114), while what had previously been a mere hypothesis on my part that the so-called "motor centres" of Ferrier were in reality kinaesthetic centres was gone into much more thoroughly, with attempts at actual proof, in the debate which I was asked to open before the Neurological Society in December, 1886,[5] and again in my presidential address to the same society,[6] on "The Neural Processes underlying Attention and Volition."[7] In the debate I attached much importance to Sir Victor Horsley's communication which appeared in the BRITISH MEDICAL JOURNAL a few months previously (p. 670), when he first dealt with the question which he has now elucidated in such a masterly manner. —I am, etc.,

London, July 24th. H. CHARLTON BASTIAN.

A POINT IN THE USE OF KOLLMANN'S URETHRAL DILATOR.

SIR,—In the BRITISH MEDICAL JOURNAL of July 21st Dr. Alex. MacLennan draws attention to the use of rubber covers on these dilators. These instruments were originally made to be used with covers, and I have almost daily used them in this way for over twelve years. Lately, however, the tendency has been to discard the covers and use the instruments naked, and with this object the blades (four or eight) have been made with stout wire which do not approximate closely. It is claimed for the naked instrument that it can be used more aseptically, and that the rubber tends to prevent the escape of the contents of the diseased urethral glands and lacunae during a dilatation. The irrigating dilator, of course, cannot be used with a cover. I tried one of these instruments three or four years ago, but found that it badly nipped the urethral mucous membrane on closing previous to withdrawal. Dr. Wossidlo, of Berlin, assures me, however, that now he constantly uses the naked instrument and never experiences this trouble.

The rubber covers can be obtained from the makers of the dilators, and I always obtain mine direct from Heynemann of Leipzig. They can be sterilized by drawing over a metal rod, which Messrs. Down Brothers have made for me, and boiling for fifteen minutes in water containing a little carbonate of soda. The rod prevents the cover from getting wet inside, and at the same time sinks it. French chalk is used to facilitate the introduction of tha dilator or rod into the cover. The cover, after using a few times, becomes flabby, and unless well pulled up over the dilator has a tendency on withdrawing from the urethra to ruck inside a tight meatus, and may give trouble. Just before use, with the cover *in situ* on the dilator, the latter should be rapidly expanded to its full extent as if trying to burst the rubber, and it should then be carefully examined for holes or other defects. Before closing it should be thoroughly rubbed with alcohol. Boiled vaseline and oil may be used as a lubricant, or, better still, where the meatus is large, aseptic glycerine jelly or boro-glyceride.—I am, etc.,

London, W., July 26th. W. WYNDHAM POWELL, F.R.C.S.

[3] Loc. cit., p. 587.
[4] At that date it was commonly supposed that the corpora striata were motor centres.
[5] *Brain*, April, 1887.
[6] Ibid., April, 1892.
[7] This last communication is not included in the list of papers quoted by Sir Victor Horsley.

THE TREATMENT OF SOME CHRONIC INFLAMMATIONS OF THE EYE.

SIR,—I was very much interested in an article on this subject by Dr. C. G. Russ Wood, which appeared in the JOURNAL of July 24th, p. 202, especially in his remarks about the diaphoretic action of guaiacol, because when I was at the Meath Hospital, Dublin, twelve years ago, this action of the drug was brought before the notice of the physicians by a fellow-student of mine in connexion with the reduction of high temperatures in enteric fever and acute rheumatism, and it was extensively used for this purpose for a short period in both diseases, but was finally discarded because it was found to be impossible to limit its action, and in some cases where the fall in temperature was very marked the patient suffered severely from collapse, although we never used more than 30 minims in any case. I believe Dr. Day used it in the Cork Street Fever Hospital on a large number of cases of enteric fever, and discarded it for the same reason. When I was up for my final M.B. I mentioned this in my paper, and I remember that in my oral examination I was closely questioned on this point by my examiner, and asked where I had seen it tried.—I am, etc.,

Lincoln, July 27th. A. S. GREEN.

THE FINANCE BILL.

SIR,—There is a provision in the Finance Bill to which I have not seen any attention drawn, but one worth serious consideration. It is, I believe, provided that an extra tax shall be paid on unoccupied land in or about any town, and I understand gardens above one acre in extent will be included in this category. It is important that the bearing of this should be considered from a medical point of view. It is a recognized fact that the larger the area of a town in proportion to the number of inhabitants—that is, the less the density of population—the better are the sanitary conditions.

It may at first sight appear a great luxury to surround a dwelling with large grounds in a district where land is valuable; but the general public benefits by the large air space, and the most undiluted selfishness cannot avoid improving the conditions of those living outside the fences, and proving an inestimable gain to all the inhabitants of the town.

Were the area on which a town stands circumscribed, as in ancient times, by walls, then something might be said in favour of throwing open all land for building purposes; but, under the present conditions of any place in this country, it is a retrograde policy to attempt in any way to curtail the large gardens which now lend a charm to our urban and suburban districts, and also are fresh-air centres from which all benefit. It is certainly not for the public good that any obstacle should be placed in the way of providing and increasing the area covered by cultivated garden ground. The creation of ground rents is always present as a powerful incentive to the builder to crowd houses on the land, and if, on the other hand, the holder who avoids the temptation to do this, and at the same time improves the health conditions of the neighbourhood, is to be penalized, I am afraid the effect of the measure will be very damaging to the public wellbeing. This proposal, put forward, I believe, as one of the aims of Socialism, will certainly not act for the social good of the people. It is, I think, fitting that this question should be ventilated in the medical press.—I am, etc.,

Leckhampton, July 26th. WM. MILLIGAN.

CANCER RESEARCH.

SIR,—It seems to be hopeless to convince Dr. Skene Keith that it is usual—at all events, in England—to refer to the source of inspiration when claiming a novel principle in scientific work. There does not appear to me to be much difficulty in looking up references when writing on any subject, and it is apparent from Dr. Keith's letter that he was in possession of what I have written upon the medicinal treatment of cancer. Now he claims to have introduced a new principle when the disease is under treatment—namely, that there should be blood examination. I fail to recognize any new principle in this. Dr. Keith appears not to understand what blood examination entails. The mere counting of corpuscles I have found to be of little real value, and I have attempted to

obtain laboratory investigations connected with the serum but without success. The normal condition of the serum should be ascertained by continuous observation before treatment, and continued during treatment if any practical result is to be obtained.

If Dr. Keith really desires to forward matters, he should, instead of making a hopeless, incompatible mud (quite unsuitable for injection) with soamin, green citrate of iron and ammonium, and sodium cinnamate for injection purposes, set to work to make a continued series of laboratory examinations of the blood of his patients, and publish the results.

In the present state of our knowledge of the chemistry of the blood and of living cells generally, he would indeed be a benefactor to the human race if he could advance our knowledge in this direction. As yet, it is impossible to assert that he has himself originated anything of value.—I am, etc.,

Hatfield, Aug. 9th. LOVELL DRAGE.

THE ASSOCIATION OF MEDICAL DIPLOMATES OF SCOTLAND AND THE SUGGESTED MEMBERSHIP QUALIFICATION.

SIR,—The holders of the licentiateship of the Edinburgh Royal College of Surgeons, either alone or conjoined with that of Glasgow, have for a long time laboured under a somewhat serious disadvantage in practice owing to the lack of a membership diploma. The matter has for some years engaged the attention of the Association of Medical Diplomates of Scotland, on whose behalf I venture to ask the publication of the following communication addressed to the Edinburgh College.—I am, etc.,

DAVID WALSH, M.D.,
President, A.M.D.S.

London, W., July 21st.

To the President and Council of the Royal College of Surgeons of Edinburgh.

Gentlemen,

The Association of Medical Diplomates of Scotland beg respectfully to remind you of a Petition formally presented to your President and Council in 1905, praying that steps be taken, by extension of Charter if necessary, to secure an additional diploma of membership for your ancient College. It was shown in that Petition that the lack of an intermediate qualification between the licentiateship and the fellowship imposes a serious social and professional handicap upon your licentiates in various parts of the United Kingdom and elsewhere, inasmuch as the majority of their competitors hold the membership of other Colleges. The Council of the Association of Medical Diplomates of Scotland, therefore, as representing the interests of Edinburgh Diplomates in all parts of the world, would be glad to learn whether the Council of the Royal College of Surgeons of Edinburgh have taken any further steps in the matter. If nothing has yet been done they would venture to ask if there be any likelihood of this important, and, in their opinion, most salutary change being considered seriously by the Council of the College.

It need hardly be said that the Council of the Association would most willingly co-operate with the College in any way that might lead to the desired end. They presume the College will hardly require any further proof of the popularity of the proposed change than that afforded by the Petition already formally lodged with the College—a document that was signed by many hundreds of fellows and licentiates.

In conclusion, we venture to urge that the institution of the diploma of membership must infallibly lead to a great increase of the popularity and the usefulness of our ancient College: nor could it fail to establish a fresh bond of union between the College and its diplomates in all parts of the world, at the same time awakening old memories, interests and associations: while it would add to the material prosperity of the College for many years to come.

Awaiting the honour of your further reply to the considerations set forth in our former Petition.

We have the honour to remain, on behalf of the Association of Medical Diplomates of Scotland,

Yours faithfully,

(Signed) DAVID WALSH, M.D.,
President.
SKENE KEITH, M.D.,
Honorary Treasurer.
P. H. PARSONS, L.R.C.S. and P.Edin., etc.,
Honorary Secretary.

"THE DOCTOR AS A VICARIOUS PHILANTHROPIST."

SIR,—May I be permitted to relate one out of many experiences illustrating the question which is being ventilated in the columns of your JOURNAL concerning the doctor as a vicarious philanthropist? Some years ago, while practising in a little country town in the State of Illinois, U.S.A., I had, of course, my share of poor patients. One was especially destitute, and the postmaster, storekeeper, undertaker, etc. (he was all that and more in one), suggested that I would have to be very lenient with Mr. X., since he was so poor. I therefore offered to remit from X.'s account two dollars for every dollar's worth of groceries which the storekeeper would send him without cost. Needless to say, my offer was not accepted, since that "was different." Needless to say, likewise, that my munificence had to be exerted, while the storekeeper got full pay for his goods. And yet where is the difference? I am not good at conundrums, and give it up.—I am, etc.,

Asheville, N.C., U.S.A., July 23rd. H. J. ACHARD.

SIR,—Would it not be advisable that in this increasingly commercial age we should let the public, whether government, municipal or civil, know that we intend to run our profession on business principles in the same way that every one else does? Now that every one seems to try to get everything for as nearly nothing as possible, as shown by persons of position and wealth trying to join "lodges," the "humanity" lever should cease to be worked to the detriment of the profession, or at least the profession should cease to allow it to be worked in such a way. This "lever" is not only used by those who cannot pay, but by many who can.

The rider "That it was unwise of doctors to raise the question of fees" is the *reductio ad absurdum*, but shows the ideas that are gaining ground with the public. Their "humanity" does not cover the ground that the doctor and his dependants have to live too.—I am, etc.,

Ayr, Australia, June 22nd. J. BOOTH-CLARKSON.

THE POSTMASTER-GENERAL AND THE MEDICAL PROFESSION.

SIR,—Equality is the watchword of the Socialist. I regret to see a letter signed "Socialist" in the JOURNAL of August 7th, p. 352. I would point out to this gentleman that a Socialist Government is trying to impose upon medical men, and force them to perform skilled work without remuneration, and to place "Socialist's" patients in the hands of hospital physicians and surgeons, so that "Socialist" will soon have no *locus standi* among his poorer patients. Clubs do not pay medical men, except perhaps as an introduction to practice, and if we are to treat individual members of a State club at club rates, I do not think that any one will be anxious to undertake the work; or if any one does, he will be sorry ever afterwards. If, of course, the patient so values the services of "Socialist," he will still continue to seek his advice, and pay proper remuneration. The selfishness spoken of by "Socialist" is more often on the part of the patient than on the part of the medical man—patients who are in a club preferring to accept the services of the club doctor, even through they could well afford to pay any medical man his regular fee.—I am, etc.,

August 7th. ANTISOCIALIST.

SIR,—"Socialist" would seem to be oblivious to the fact that the Post Office is a large source of income to the Chancellor of the Exchequer, several millions of money being contributed by it annually to the public purse. Its sick-pay conditions with its staff are exceedingly generous—a generosity which would have been impossible had it not been that the Postmaster-General, when instituting it, relied upon the careful supervision of his medical officers. It is their faithful and fearless exercise of this supervision which is the primary cause of the complaints that emanate from the staff regarding the official medical officers, and there can be no question that if this supervision were withdrawn, as it undoubtedly would be if Dr. Bruce's or "Socialist's" proposals were ever adopted by the Department, and if present sick-pay conditions were continued, it would be at the cost of a very large reduction in the present-day profits which accrue from the working of the Post Office. It is impossible to state an exact figure, but in my opinion, based upon prolonged experience, it would not be an exaggeration to calculate that this sum would not be far short of a million sterling. The result of the work of postal medical officers is that it enables the Post Office to concede generous sick-pay conditions to its staff;

to very materially swell the total profits it annually hands over to the Chancellor of the Exchequer, and to afford thereby facilities to the public which otherwise might be found to be impracticable.

If the question is viewed in this light, surely it cannot be maintained that any medical practitioner or any other member of the public is forced to pay his share of taxation for the benefit of postal medical officers. Is it not rather the reverse, and that if it were not for the loyal and fearless manner in which postal medical officers discharge their duty to the department and staff, "Socialist" and others would find themselves forced to pay considerably heavier taxation than at present obtains?

Surely, therefore, instead of "Socialist" owing postal medical officers a grudge he ought to realize that he owes them a big debt of gratitude.—I am, etc.,

August 7th. POSTAL MEDICAL OFFICER.

CONTRACT PRACTICE.

SIR,—In Dr. Williams's address, "Hercules and the Wagoner," reported in the JOURNAL of July 24th, he remarks that "the General Medical Council is the only body to keep us in the right line of conduct." Is it not equally true that those who engage in contract practice, under the present system, have strayed from the "right line," and have sold their birthright of freedom for a very small and unsavoury mess of pottage?

Since our unaided efforts to get out of the mire are so futile, would it not be wise to appeal to heaven (in the shape of the General Medical Council) to help us?

For years and years we have been talking about the injustice of contract work. Pages of correspondence have been written, conferences have been held, resolutions have been passed, and yet we are still in the same state of bondage.

I venture to think that, until it is made absolutely impossible for friendly societies, etc., to get men to slave for them, they will not let go their grip. Why should they?—I am, etc.,

uly 24th. F. W. S.

THE PSYCHOLOGICAL BASES OF ORATORY.

SIR,—The letters of your contributors on "oratory" have doubtless proved interesting to us all. As one who has done a deal of public speaking, perhaps I may be allowed a brief opportunity. To begin with, I think the wisest thing said in this discussion was that of your leader on the subject wherein one was advised to eschew oratory and stick to simple, clear, and direct statement. Though there must be cases of cerebral palsy, in which the speaker or would-be orator finds himself unable to extract either an idea from his brain or a word from his mouth, yet I really believe that most men would speak fairly well if they would but attend to a few necessary things. The subject on which one wishes to speak should be made familiar; the mind should concentrate upon the *essential* ideas, and find the clearest and most condensed form of expression it can—of course, all this beforehand. On rising to speak, one should as far as possible dismiss considerations of the *audience* and endeavour to speak as though arguing to empty benches. Alcibiades once complained to Socrates that he was nervous in speaking. 'Well," said the latter, "are you afraid of the leather-cutter, or the potter, or the fishmonger?" "No," said Alcibiades, "of none of these separately, but of the people." "What nonsense," replied Socrates, "to despise each man individually and fear the mass!" As we know, the lesson was not lost on Alcibiades. A very bold course of practical instruction was taken by a schoolmaster a few years ago. The chairman of the county council had distributed the prizes and inflicted upon the boys a long-winded and valueless address. The next day the master assembled the boys, referred to what had transpired, and after pointing out to them the glaring faults of the speech, told them he hoped it would be a life's warning example to them of how not to do it.

Though both in writing (except in alleged poetry) and in speech there is a marked advance over former days in shunning the oratorical and exhibiting clearness and condensation, yet there is still a great deal too much empty talking and long-winded drivel. Perhaps on the whole those who find themselves unable to speak in public are public benefactors; would that their number were multiplied manifold if it could put the gag on such as cannot speak, but will insist on speaking. Of these are they who "mum-mum" in every sentence; who repeat words over and over; who, when they fail to find a word to enable them to go on, just begin over again; who get past the end and then feel around for twenty minutes (I have known it forty) in trying to find it; who care for nothing if they can but hear the sound (not, alas! always euphonious) of their own voice, and so drone away as though eternity were already upon us. From all points of view it is unfortunate that Parliament sets so bad an example.—I am, etc.,

July 17th. CANTAB.

SPEECH FRIGHT.

SIR,—In the discussion on "speech fright" which has been carried on in your columns none of your correspondents have yet pointed out what seems to me to be the *fons et origo mali*, and that is to regard it as a special instance of the nervousness which is produced by the habitual consumption of tea and coffee. These beverages are constantly found to produce a condition in which the person suffers from tremulousness of hands, and lips, and tongue, and a feeling of oppression rendering breathing and speech difficult, from palpitation, and from sudden temporary blankness of mind and momentary dimness of vision which patients appropriately term a "mazy bout." A feeling of insecurity and a dread of something evil impending, especially an anticipation of the failure of the powers of the mind, is often present. These symptoms come on at various times in the day or night, and constitute a disorder of the ordinary activity. Before they are experienced, however, and whilst they are incubating, the action of these beverages has been sapping what can be termed the reserve power, and when an unusual demand is made, such as that of making a speech, etc., which calls upon this reserve power, the damage which has been caused is shown by the symptoms termed "speech fright." What really occurs is this: The consciousness which is normally functioning in relation with apparently intact nerve tissue on these special and unusual occasions becomes temporarily related with the damaged reserve nerve tissue, and is correspondingly affected. The effect of opium, bromide, and other narcotics is to prevent the expansion of the consciousness by a process of narcosis, and to confine it to intact nerve tissue, so that no disorder occurs. But such limitation is a veritable intoxication, which curtails the highest powers of the mind of the individual, such as the judgement, mental consistency, and constructive ratiocination. The rational plan of treatment of "speech fright" is preventive, and consists in advising abstention from tea, coffee, and all other drug stimulants, so as to allow the reserve power to be perfectly healthy, and not palliative only, as in prescribing a narcotic, which makes the last state of the patient worse than the first. If a person's brain is perfectly healthy, when exceptional demands are made upon it, it will be able to meet them. The fact that opium, bromide, and other narcotics control these "nervous" attacks shows that they are due to the consciousness becoming related with *damaged nerve tissue*, and points clearly to the harmful effect which is produced by the stimulants such as tea, coffee, etc., in habitual use amongst us.—I am, etc.

Rock Ferry, July 14th. F. S. PITT-TAYLOR, M.B., Ch.B.

DENTAL TEACHING FOR MEDICAL STUDENTS.

SIR,—Since the publication in this JOURNAL of my paper on the "Medical Aspects of Dentistry and the Necessity of Dental Instruction of Medical Students," I have held in this university a class such as I indicated for senior medical students. It has been very well attended, and I was much gratified at the interest taken in the subject by the students. There were eight lectures supplemented by practical demonstrations. The ground covered included:

Pathology of dental caries, prophylactic treatment with special reference to diet. Remedial treatment (indications for, nature of, and details as to "first-aid" treatment).

Pathology and treatment of pyrrohoea alveolaris. Effects of systemic disorders upon the teeth. Relationship of dental disease to some systemic diseases.

The treatment of fractures of the maxillae.

Demonstrations were given upon the diagnosis of various conditions, extracting teeth, anaesthetics for dental purposes, and the application of various dressings.

The addition of such a short course to the medical curriculum of all schools cannot possibly be regarded as disadvantageous in any way; that it would prove of great value to students, and therefore should be adopted, I think is equally certain.—I am, etc.,

University of Otago, June 4th. H. PERCY PICKERILL.

EPSOM COLLEGE.

SIR,—As a doctor's daughter and a doctor's wife, I should like to call the attention of the members of the medical profession to the recently published annual report of Epsom College. In that report occur the following statements:

1. The council hope that friends of the institution will do their best to secure fresh annual subscribers, since death removes annually many who had been staunch supporters of the college from soon after its foundation. If members of the profession who are unable to contribute large amounts would subscribe a guinea, or even half a guinea, annually, and if all medical men would plead the cause of the foundation to their well to-do relatives and friends, the present number of fifty pensioners and fifty foundation scholars could be maintained without difficulty. The council are reluctant to reduce either of these classes of recipients, and such a regrettable course will not be taken unless it becomes an absolute necessity.
2. In an appeal recently issued by Sir Henry Morris, the honorary treasurer, attention was drawn to the fact that whilst the names of 39,827 persons are contained in the *Medical Register* there are under 2,200 medical practitioners—(that is to say, only one-eighteenth of the profession)—who are annual subscribers to the foundation.

I feel convinced that this truly lamentable discrepancy is the result of want of thought more than want of heart, and that the matter only requires bringing more forcibly and prominently before members of the medical profession for the state of affairs to be substantially improved. It is heartrending work to read the lists of candidates, both for the vacancies for pensioners, and especially, perhaps, for those for foundation scholars, so sad are the details of anxiety and struggle—so few the fortunate ones, for whom there is room.

I think that all prosperous and successful medical men should make it a point of honour to subscribe to this excellent school; there must be a large number who could, with the greatest ease, send their annual subscription of one or two guineas, and so ward off the danger of reducing the number of foundation scholars. I know of a subscriber who sends a guinea for each of his sons, as a thankoffering that his means enable him to help those who are in less fortunate circumstances. May I recommend this as a suggestion to many in a similar position, that by so doing the proportion between the numbers quoted above may be more satisfactorily and creditably adjusted?—I am, etc.,

Oldham, July 11th. S. MARTLAND.

Subscriptions may be sent to the College Office, 37, Soho Square, London, W., payable to the Secretary, J. B. Lamb. Cheques crossed to Barclay and Co., Limited.

HERMAPHRODITISM.

SIR,—A case that occurred in my practice helps to bear out Sir Samuel Wilks's theory "that in the large majority of cases it is due to the want of development of the male."

A. B. was one of "two daughters" whose father was English and mother Russian. They were both dressed, brought up, and educated as girls, with no suspicion of anything being abnormal until A. B. became engaged at the age of 17 or 18. For a reason, which is not necessary to state here, the intended husband became frightened and broke the engagement off; the parents then took "her" to the doctor to be examined, and it was found that she was hermaphrodital—that is to say, on examination there appeared to be a small vagina, but there was a penis 3 in. long bound down by loose tissue which was easily dissected back, and a testicle on each side, the mamma were partially developed. "She" is now a "handsome young man," with very scanty hair on the face. The general build is that of a man.

The word "hermaphroditism" means in Greek the union of male and female, as Sir Samuel Wilks states—a person of both sexes. It was the name of a mythological figure amongst the Greeks, who copied their mythology from the Egyptians, but they never understood the mythology or eschatology of the latter, and therefore could not comprehend the real meaning. In the *Ritual of Ancient Egypt*, ch. 115, Horus assumed the form of a female with the "side lock" of a child. He is portrayed as a male child with feminine breasts. In the Pyramid Text it says: "Hail, Unas, the niples of the bosom of Horus has been given to thee, and thou hast taken in thy mouth the breast of thy sister Isis. It was the mystical divine male-female of the gnosis—carried on by the Greeks as their Bacchus or Serapis. Horus with the ctes—Venus with the beard." In Egypt it was the effigy of In-em-hetep, the son of Ptah, who was the dual representative of the biune parent. The hermaphroditical shape of monstrous personality was not historical, or had it been "made flesh"; it was a symbolical figure in the religious doctrines of the Egyptians, and originated at the time of the Lunar-Solar Mythos, when the Fatherhood replaced the Motherhood, which had hitherto been the doctrine in their Stellar-Mythos, and was perfected when their eschatology, practised at Annu, finally replaced their Solar-Mythos, which the Greeks never understood; so the latter coined this word and made the image to bring it as near the Egyptian as their poor brains could conceive or understand those lofty ideas and beliefs of the old Theopneustics of Ancient Egypt; but the real meaning was lost to the Greeks, who perverted these doctrines, as a consequence, and have handed down a "smudge" of the real essence.—I am, etc.,

London, S.E., July 7th. ALBERT CHURCHWARD.

SANITATION IN WEST AFRICA.

SIR,—Adverting to the articles on the Medical Service in West Africa and Sanitation, published in the JOURNAL on July 17th, p. 160, and July 24th, p. 224, it will interest your readers, and Professor Ronald Ross in particular, to read the following extracts from a letter I have received within the last few days from an official (not a medical man) occupying a very important position in a principal station out there. He writes:

> Everything is sacrificed to the railway. There is not one penny of money for any work except the railway. I am glad to see Ross has at last spoken out about the criminal negligence of the Government in sanitary matters for the past ten years in West Africa. Every word he (Ross) says is true. It is scandalous and disgraceful the utter lack of interest the Government take in sanitary matters out here. A mere pittance of money is allowed to further sanitary works, and here in cantonments we are steadily going backwards. Every penny is grudged that does not go in the railway.

For obvious reasons I cannot subscribe my name, so I send my card.—I am, etc.,

July 29th. COLONEL, M.D., R.A.M.C.

Medico-Legal.

ACTION FOR ALLEGED NEGLIGENCE.

THE action Beattie *v.* Bryars and Mateer was heard on July 27th and 28th at the Assizes in Belfast, before Mr. Justice Dodd and a special jury. The plaintiff, John Beattie, a smith's finisher, sued Drs. John S. Bryars and Charles A. Mateer, both of Belfast, to recover £1,000 damages for personal injuries alleged to have been caused by the negligence and want of skill of the defendants. The defendants pleaded they had properly diagnosed the case, and joined issue with the plaintiff.

The plaintiff, a man aged 50, with a wife and six children, said he was now unable to provide for himself or his family. On May 27th, 1907, he was returning from an early morning bicycle ride, and trying to save his watch from slipping, he overturned and fell heavily on his left hip. Dr. Bryars, his society doctor, examined him. Dr. Bryars told him he had struck the sciatic nerve, and would be all right in a few days, and that no bones were broken. He prescribed a liniment and hot stupes. A week later Dr. Mateer was called in by witness's wife, and said Dr. Bryars was treating him wrongly, as there was nothing wrong with the sciatic nerve, but that he was suffering from joint trouble. A consultation was held between the two medical men, the talk of the doctors being about sciatica, joint trouble, and paralysis. In December he went to see Surgeon Campbell, but the latter was not there, and an *x*-ray photograph of his leg was taken. He afterwards saw Surgeon Kirk, and an operation was performed. His leg was now two inches short.

Mrs. Mary Beattie, wife of the plaintiff, deposed to the foot being turned out, to the leg being shortened, to the great pain, to the treatment by hot stupes, and to the inability to walk without the aid of crutches. She caused Dr. Mateer to be called in, who, she said, stated that the leg was shorter and would

require to be put up in splints. In July her brother advised that the plaintiff should be taken to hospital. Eventually a Roentgen ray photograph was taken in the hospital and the patient examined.

Dr. Allworthy said plaintiff came to him in February, 1908, and asked to be treated for sciatica; on examination, witness came to the conclusion that the neck of the femur had been fractured; he based his diagnosis on the history and the shortening; the pain and wasting suggested sciatica. It would not be possible to cure this fracture by splint. He took an *x*-ray photograph, which did not disclose the fracture.

For the defence, Dr. J. L. Bryars said that he had been qualified since 1886, and had practised in Belfast since 1892. When he first examined the patient he found no eversion of the foot, and no grating on manipulation and no shortening. In June he saw the patient with Dr. Mateer, and in July suggested that a radiograph should be taken, and subsequently made arrangements with the plaintiff's brother-in-law for his admission to hospital; plaintiff, however, did not go. In cross-examination he said that his diagnosis was contusion of the hip.

Dr. Mateer generally corroborated the evidence of Dr. Bryars. When he examined the patient on June 18th he found no evidence of fracture; two days later, when he examined the patient with Dr. Bryars, the first diagnosis was confirmed. In reply to the judge Dr. Mateer denied absolutely that he had told plaintiff's wife that the leg was shorter, or that the treatment adopted by Dr. Bryars was wrong. The patient improved so much that he was able to walk, but the witness detected a slight shortening about the end of December. In January he was examined at the hopital by Surgeon Campbell, who thought that the bone had been crushed.

Mr. Robert Campbell, F.R.C.S.Eng., Surgeon to the Royal Victoria Hospital, said he had examined plaintiff nine months after the injury. The limb was about 1½ in. shorter than the other, and there was a thickening at the upper end of the femur. He came to the conclusion that there had been fracture of a rare type—subperiosteal.

Mr. T. S. Kirk, B.Ch., Surgeon to the Royal Victoria Hospital, said that he saw the patient in February, 1908. The leg was shorter, and there was some wasting of muscle. He operated, laying bare the bone, and found that there had been no union, though the bones were in apposition; he cut away the loose bone, which still further shortened the leg. The man would be able to go about his work, although crippled in his walk. It was a rare form of fracture. The man did not attend when Dr. Bryars telephoned to him to make an appointment.

His Lordship put the following questions to the jury: (1) Was Dr. Bryars negligent? If so, what damages? (2) Was Dr. Mateer negligent? If so, what damages?

After considerable consultation, the foreman asked what was incompetence or lack of reasonable skill on the part of the practitioner. A mistake was not incompetence.

His Lordship said it must be something that indicated a want of fitness for the profession. The jury should take into consideration the general standard of the profession in the neighbourhood and the opinion of the leaders of the profession.

The jury again retired, and in five minutes returned with a verdict answering the questions in the negative.

His Lordship said that was a verdict for the defendants.

X-RAY WORK AND UNQUALIFIED OPERATORS.

H. H. N. writes: In the matter of *x*-ray work done by unqualified but perfectly competent operators, can you inform me what risk the medical man employing them runs of an action being brought against him in the event of untoward results? The operators in question are attached to a large hospital and do this work in their spare time in my neighbourhood.

*** If the operators are competent, the doctor employing them would not be under any liability at law because they possessed no medical qualification. In the event of "untoward results," the patient might bring an action against the doctor, but in order to succeed would have to prove negligence. If the operators were competent, the fact that they were not medical men would be immaterial in this connexion, and such a charge might easily be rebutted.

MEDICAL OFFICERS TO CLUBS AND BONESETTERS.

THE correspondent whose inquiry was published in the JOURNAL of July 31st, p. 297, thinks that if he is required to visit every fortnight and certify a patient who is being treated by a bonesetter, this would be tantamount to covering an unqualified practitioner.

*** Our correspondent has two duties as club surgeon: (1) to attend a member when sick; (2) to certify that he is entitled to sick allowance on account of disablement. It seems that in this case he is only asked to perform one of these duties. As he does not recognize the bonesetter in any way the question of "covering" does not arise. That a medical practitioner is put in a very unpleasant position in such circumstances may be frankly admitted, but it is an incident of contract practice of this kind. It is to be feared his only remedy is to resign the appointment.

ENQUIRER.—Our correspondent's best course would be to bring the matter before the Ethical Committee of his Division.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

THE ADVERTISING OF MEDICAL SCHOOLS.

A CORRESPONDENT writes: I have lately received the detailed prospectus of a well-known school of medicine by post, marked on the outside "not to be returned," with the address and telephone numbers of the members of the staff printed in full. May I ask whether such a prospectus, issued under the conditions above detailed, may not constitute an advertisement?

*** Of course it is an advertisement, as is a door-plate or the printing of names in the *Medical Directory*. The question is whether it constitutes an objectionable advertisement contrary to the use and practice of the profession. In reply to the question so put, we should say that the procedure described is unusual, and we sincerely hope that it will not be imitated by other schools.

DENTISTRY BY MEDICAL PRACTITIONERS.

COUNTRY ASSISTANT asks whether it is in any way a breach of etiquette for a medical practitioner to undertake the filling of teeth. I am in a general practice in a country district, and the nearest dentist is four miles distant. I am often asked by patients who come to me with toothache whether I cannot stop teeth, and so give permanent relief without extraction.

*** There can be no ethical objection to a medical practitioner pursuing any branch of the art of dentistry, provided he possesses the requisite skill. Section 5 of the Dentists Act of 1878 evidently contemplates the practice of dentistry by medical men, and authorizes them to recover their fees or charges in any court.

The Services.

ROYAL ARMY MEDICAL CORPS.

AT the recent examination in London, for which fifty-four candidates entered, for commissions in the Royal Army Medical Corps, the following were successful:

	Marks.
G. H. Dive, St. Bartholomew's Hospital, M.R.C.S., L.R.C.P.	632
L. C. Hayes, Birmingham University, L.R.C.P.(London), M.B.(Birmingham)	597.5
B. G. Goodwin, Birmingham University, M.R.C.S., L.R.C.P.	584
A. S. Cane, Cambridge and St. Bartholomew's, M.R.C.S., L.R.C.P., B.A.(Cambridge)	563
T. H. Dickson, Edinburgh University, M.B., B.Ch.(Edinburgh)	547
K. Comyn, Cambridge and King's College Hospital, M.R.C.S., L.R.C.P., B.C., B.A.(Cambridge) ...	542
F. R. Laing, Edinburgh University, M.B., B.Ch.(Edinburgh)	539
A. G. Jones, Guy's Hospital, M.R.C.S., L.R.C.P., M.B., B.S.(London)	536
J. M. Weddell, Cambridge University, M.R.C.S., L.R.C.P., B.A.(Cambridge)	535
P. C. Field, Bristol and Guy's Hospital, M.R.C.S., L.R.C.P.	528
V. P. Hutchinson, Guy's Hospital, M.R.C.S., L.R.C.P.	518.
T. W. Stallybrass, Newcastle-on-Tyne, M.B., B.S.(Durham)	514.5
H. G. Robertson, Glasgow University, M.B., B.Ch., B.Sc.(Glasgow)	513.5
R. C. G. M. Kinkead, Queen's College, Galway, M.B., B.Ch.(Royal University, Ireland)	511
C. M. Nicol, Glasgow University, M.B., B.Ch.(Glasgow)	511
H. V. Stanley, Trinity College, Dublin, M.B., B.Ch., B.A.(Dublin)	511
E. C. Stoney, Sir P. Dun's Hospital, M.B., B.Ch., B.A.(Dublin)	510.5
A. P. O'Connor, Catholic University, M.B., B.Ch., B.A.(Royal University, Ireland)	507.5
R. M. Davies, Durham University, M.B., B.S.(Durham)	506
R. Gale, Glasgow University, M.B., B.Ch.(Glasgow)	505

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

AT the May examination in military subjects of officers of the Territorial Force and others, Lieutenant-Colonel R. H. LUCE, M.B., F.R.C.S., 1st North Midland Division Field Ambulance, passed in (*d*) ii, as required of regular officers before promotion to the rank of Major.

Obituary.

ALEXANDER FRASER, M.B., C.M., F.R.C.S.I.,

PROFESSOR OF ANATOMY ROYAL COLLEGE OF SURGEONS IN IRELAND.

It is with feelings of the most profound regret we have to record the death of Alexander Fraser, Professor of Anatomy in the Royal College of Surgeons in Ireland, which took place on Sunday, July 25th, at his native place, Lossiemouth, Elgin, whither he had gone with the object of recruiting his health.

Alexander Fraser was born in 1853, and received his early education at Kinnedar School in Lossiemouth, from which he proceeded to Glasgow University. As a medical student he had a distinguished career, obtaining the Medal in Anatomy, and subsequently graduating M.B. and C.M., with First Class Honours in Medicine in 1878.

While acting as Assistant for some time to the late Professor Allen Thomson, he paid special attention to the study of the development of ova. Subsequently he studied anatomy and embryology under Kölliker of Würzburg and His of Leipzig.

We next find Fraser as Chief Demonstrator of Anatomy in Owens College, Manchester, where his great abilities as a teacher early manifested themselves. In that post he did some excellent embryological work, the results of which were embodied in papers appearing in the *Transactions* and *Proceedings* of the Royal Society.

In 1883 the Chair of Anatomy in the Royal College of Surgeons in Ireland became vacant through the appointment of the late Professor D. J. Cunningham to the corresponding post in Dublin University. Fraser was offered and accepted the vacant chair, into the duties of which he threw himself with indefatigable industry and untiring energy. In a short time he amply justified his selection, for as a lecturer and teacher he had neither rival nor superior. From the first his enthusiasm for his work infected the students attending his courses of instruction. The mastery of his subject, the clearness of his exposition, and the ease with which he illustrated his lectures on systematic anatomy by drawings on the blackboard lent a peculiar charm to his teaching.

The amount of voluntary work done by Professor Fraser for the members of his classes is known only by those who attended or to those whose privilege it was to be intimately acquainted with him in the school. He was a true friend to the student; it may, indeed, truthfully be said that a father could not have taken a deeper interest in the welfare of his son than Fraser took in each member of his class. His advice was never sought by the student in vain, and in many instances his purse, too, was freely opened when necessity demanded it. Fraser was no stern disciplinarian, yet his control over the students was truly marvellous, a fact which must be attributed to the feelings of affection with which he was regarded by every member of his class.

His contributions to anatomy and embryology were numerous, the most important were: The Development of the Ossicular Auditus in the Higher Mammalia, *Trans. Roy. Soc.*, 1882; On the Inversion of the Layers of the Blastoderm in the Rat and Mouse, *Proc. Roy. Soc.*, vol. xxxiv; Photography as an Aid in Morphological Work, *Brit. Assoc. Rep.*, 1889; New Method of illustrating the Topography of the Brain, ibid.; Case of Porencephaly, *Journ. Ment. Sci.*, 1894. In 1890 he published his large work, *A Guide to Operations on the Brain*. Many other papers appeared from year to year in the *Transactions of the Royal Academy of Medicine in Ireland*.

All his work was undertaken in a truly scientific spirit; everything he saw and discovered was worked out clearly from the embryological and developmental standpoints until, as he would say, "it was as clear as the light of day." In this manner he had recently studied the sympathetic nervous system, the nervous supply of the viscera, and the distribution of the peritoneum. He had in this way completed the study of the entire body, and was about to record the result of his labours in a book when the hand of death was laid upon him. The loss to science, owing to his failure to publish the result of his work, is as great as is to the college his loss as a teacher.

Professor Fraser was of a most retiring disposition, averse from all manner of display, while his own high-mindedness and love of honesty and truth caused him sometimes to offend where offence would have been avoided by one no less honest but more diplomatic.

On the completion of his twenty-fifth year as Professor of Anatomy in the school, the President, on behalf of the college, on the evening of the last annual dinner, presented Professor Fraser with a cheque enclosed in a suitably inscribed silver casket. At the same time, his past and present pupils, together with some of his friends and colleagues, initiated a movement to present him with a testimonial in recognition of their appreciation of his distinguished position as an anatomist, and of his great ability as a teacher, as well as to show their respect and esteem for him as a man and a friend.

Fraser's fatal illness dates from February last, when he had an attack of influenza, which he neglected, with the result that the tubercle bacillus found a fertile soil in which to accomplish its deadly work. Contrary to the advice of his friends, he refused to take rest. It was only after some months that physical weakness compelled him to desist, so that there can be but little doubt that Fraser fell, like many another good and true man, a martyr to an over-conscientious idea of duty.

His untimely death will be deplored by the members of the profession not alone in Ireland but in Great Britain. To his widow we tender our heartfelt sympathy.

Dr. A. Francis Dixon, Professor of Anatomy in Trinity College, Dublin, writes: In the death of Professor Alexander Fraser Dublin has lost the last of the three men who did so much during the past quarter of a century to advance the study of anatomy in her medical schools. The names of Birmingham, Cunningham, and Fraser will always be honoured, not only in the schools whose interests they so faithfully served, but by all who appreciate and value scientific anatomical investigations. As a pupil and admirer of the late Professor His, Professor Fraser was perhaps most deeply interested in the embryological aspect of anatomical science, and in his teaching and conversation he was

always careful to emphasize the embryological point of view. His earlier papers are concerned with developmental problems, and include an important and well-known memoir, On the Development of the Ossicula Auditus in the Higher Mammalia, published in the *Philosophical Transactions of the Royal Society*, and a research On the Inversion of the Layers of the Blastoderm in the Rat and Mouse. In later years he devoted much of his time to the study of the nervous system and published his beautiful *Guide to Operations on the Brain* in 1890. The plates which illustrate this monograph are of extreme beauty, and are a testimony to his originality, manipulative skill, and tireless energy. These qualities are also manifested by his smaller writings, and in the routine work of his department they gained for him the admiration and esteem of his colleagues and students. In spite of the fact that Professor Fraser may be said to have lived for his students and for the advancement of his school, he was always most willing to place his advice and knowledge at the service of other workers. There are many in Dublin who have availed themselves of his assistance in carrying out anatomical and surgical investigations, and who speak in the warmest terms of his kindness and sympathy and of their indebtedness to him. To all who shared his friendship and regard his death has brought a sense of deepsorrow and irreparable loss.

Sir THORNLEY STOKER writes: From the time of his appointment as my co-Professor of Anatomy in the Royal College of Surgeons until my resignation of my Chair in 1889, I was in close daily relation with Professor Fraser. I had the most intimate means of studying his character and abilities, of learning to appreciate and love his simple and beautiful nature, and of growing into increasing respect for the ability, singleness of purpose, and earnestness of a man of whom I had increasing respect and admiration up to the day of his death. He came to Dublin with an anatomical reputation which has grown ever since. He had already published work of a high class, and ever since had been an ardent and enthusiastic worker and one who showed that high quality of Scottish character which made a day on which no work was done no day. He was indefatigable. The anatomy of the sympathetic system and that of the peritoneum were, in addition to embryological studies, matters to which he seems to have particularly devoted himself, and it is to be hoped that his material has been left in such a state that it may be preserved and utilized for the science to which his life was devoted. Alec Fraser rapidly became a great favourite and man of influence with his class. With a long experience of teachers, I can remember no man who was more beloved—none with a larger, higher, finer, or more tender influence with young men. He loved them, and they felt and knew it, and responded to it with that sweet devotion which is the pride and privilege of generous youth. Like most men of strong character, he had a shell, but it was easily broken—broken by the chick of his own kind and anxious nature; and it may be said that he lived in a huge family of student men and women who loved him, and to whom, outside his work, he gave all he had. As long as the generations of his pupils live his memory will be personal and dear, and I trust that the record of his work may find among them, or his colleagues and fellow-students, a recorder worthy of the man by whose death the school and teaching of anatomy in Dublin is poorer than, in my opinion, it has been made by any other death that I can remember. But, outside his work, we have lost a faithful, true, and tender gentleman; and, personally, I have lost a friend who was always true, and held his friendship high above the troublesome ripples of the stream of life.

Professor WINDLE, President of Queen's College, Cork, writes: As one who has been associated with Professor Fraser as co-examiner for several years, it affords me satisfaction to be allowed to add my tribute to his worth to those of others who knew him. It has been my privilege to act with a number of examiners in various parts of the three kingdoms in testing the anatomical knowledge of medical students, and with none of them have I ever had pleasanter relations than with the late Professor Fraser, nor have I ever been associated with any man who displayed a greater desire to elicit what the student knew or to ensure that his real merits or demerits should be fairly and carefully ascertained. The essential kindness of the man, sometimes hidden to the casual observer, never appeared more clearly than when he was dealing with the nervous candidate, anxious but unable to give evidence of his knowledge. Of Professor Fraser's profound knowledge of his subject it is perhaps hardly necessary for me to write. He was a most untiring worker, and one of the tragedies of his early and unexpected death is that I fear much of his unpublished work must perish with him. He showed me on one occasion vast sheaves of most exquisite photographs taken by himself and relating chiefly to points in embryology. These he hoped to publish some day when less oppressed by the burden of work than was usually the case with him. I earnestly hope that some means will be found of giving these to the scientific world, for it would be a thousand pities if they were lost for ever. The present year has seen the death or disappearance from active work of several men whose names are household words amongst anatomists, but I think it is safe to say that amongst these, by those who really knew him—and they were perhaps comparatively few—none will be more lamented than that large-hearted man to whose memory these few lines are consecrated.

Sir JOHN WILLIAM MOORE (Dublin) writes: In the death of my colleague and friend. Alec Fraser, I have experienced a personal sorrow. Closely associated with him in the Schools of Surgery of the Royal College of Surgeons in Ireland for the past twenty years, I had come to admire the untiring energy, the indomitable spirit, and the burning enthusiasm of the man in his professorial work. It fell to my lot to lecture throughout each Winter Session during the hour immediately succeeding Professor Fraser's anatomical demonstration in the lecture theatre of the college. His vivid discourses seldom terminated until his "hour" was well nigh exhausted. He would then apologize to me for leaving me so little time to write the heads of my lecture on the black board. Then I would

say to him, "Please draw me such and such illustration"—it might be of the heart, or lungs, or liver—and in a few moments, with a few masterly strokes, an illuminating diagram would make its appearance on the board. During the lecture I would tell the class who the artist was, and the theatre would ring with plaudits, for he was universally liked, and even idolized, by the students of the college. Fraser literally killed himself by overwork, but his work was to him a labour of love. To the College of Surgeons and its Schools of Surgery his loss is all but irreparable.

Dr. J. SPENCER SHEILL, of Dublin, writes: Professor Fraser was in every sense of the word the real friend of the student. Even when his brow was wrinkled trying to solve some knotty problem of brain anatomy or peritoneal development, he was never too busy to answer the tiro's question, or to give there and then a short demonstration. His genial face, ever present in the dissecting room, made his association with the students one of almost comradeship, yet there was not a man amongst them who did not treat him with the greatest respect mingled with affection. He was called away just on the eve of a presentation to himself by the many hundreds of past and present pupils and associates with whom he was brought into contact during his twenty-five years as Professor in the Royal College of Surgeons, Ireland. A most brilliant and original anatomist, Professor Fraser was entirely devoted to his work, and of too quiet and retiring a nature to be an acute business man. He might have enjoyed more of the sweets of life and its honours had he been more selfish and less studious. He gained honour, however, where he sought it, and his memory will be long and affectionately treasured by the thousands of pupils who owe him a deep debt of gratitude. For myself, I can say that in the death of Professor Alex. Fraser I have lost an able teacher, a real adviser, and a dear friend.

A STUDENT (Mr. T. Mather Thomson) writes: It was a sad day for the students of the College of Surgeons when the news came of the death of Professor Fraser. He kept in such close touch with us that the feeling which settled down deep in our hearts was one of personal loss. He had gained not only our respect and admiration as a teacher, but our affection as a friend—he was our master and friend. This was evidenced in many ways; when one met an old student, the first question he asked was about Fraser, and then followed happy reminiscences of sessions in the dissecting room. His presence at any gathering of students was the signal for an outburst of applause, and I remember on one occasion when the President in his address at the opening of the session referred to Professor Fraser, a spontaneous cheer, which lasted several minutes, broke out from the students. In all matters affecting our welfare he was intensely interested, and he was so identified with the college that it will never seem the same without him. As a teacher, no one was more successful. His lectures, so original, and delivered with such zest, were never a weariness; they were all too short. He anticipated our difficulties, and explained them so lucidly, that it was little wonder there were so few absentees from his class. He made us feel that the knowledge of anatomy was of vital importance, and poured scorn on the man whose only thought was to know enough to scrape through an examination. He had no patience with mere book knowledge, and insisted that the knowledge of anatomy which would prove useful could be obtained only in the dissecting room. His familiar figure will live long in the memory of his students. He had a passion for anatomy, and his enthusiasm for work inspired us. Fraser knew all his students, and if one approached who had been neglecting his work, "You'll no' do," was the familiar reproach, and sufficient to act as a spur. His influence was such that he got the best out of his men. We were all anxious to do well in anatomy, and when a man did badly, or "came down," he was sorry, because Fraser would be disappointed. At times he would be sarcastic, but he would never hurt the feelings of his men. I have known him often, after class, call over a student with whom he had been severe, "Was I too hard on you," he would say, and thus remove any bitterness, and encourage his pupil to greater effort. He was slow to praise. A word of commendation from "Alec," as we would call him amongst ourselves with great respect and affection, was a "sweet morsel." To be called a "modest man" was great praise. To be told that your dissection was "grand," was a compliment never to be forgotten. Under such a man it is little wonder that the two years of anatomy proved to be the happiest, though perhaps the hardest, years of the medical course. His death was directly due to unsparing devotion to his work. William, the anatomical porter, had died from sepsis, and that there should be no break in the work, Fraser himself prepared his subjects for dissection in damp surroundings. Thus he got a chill. Many were the attempts made to persuade him to relinquish his work for a while, and go away, but without avail. He would not give up his lectures—he would fight on to the end of the session. He drove down to his work each day, and it went to our hearts to see him look so ill. At last he had to give in. At home in his illness his thoughts were still of the college with which he had been so closely identified for over twenty-five years. Then he took a great longing to get to his home in Scotland. Nothing could persuade him to give up the idea of such a trying journey. It is difficult to write of those days. I accompanied him as far as Glasgow, and during the night, on the boat, he awoke from a doze and proved his thoughts were still of the college. "Did you say there were more entries than ever this year?" Later he said, "Cunningham is dying, and here am I, just a poor creatur'—there's to be a clean sweep of anatomists." It is hard to realize that our master is dead. With what fondness we shall cherish his memory, and we shall never forget how much we owe him.

Miss KATHLEEN LYNN, M.B., writes: I do not think any woman medical student will ever have reason to regret having taken out the anatomy course under Professor Fraser. One never can forget his kindness, his intense desire that every one should have the best possible chance of studying anatomy thoroughly. His wonderful knowledge of the subject struck with awe the new student, and at the end of the course one was still as much impressed with it as ever. With all his vast learning, he was as simple and unassuming as a child. Among college students "The Professor" always meant Professor Fraser—he held the first place in our affection and regard. He was always on the spot to help us in any difficulty, whether in dissecting or other matters. With a few bold strokes he could transform the most muddled dissection into something edifying and instructive. How many happy hours have we spent over his embryological specimens—his special pride! The professor's lectures were ever looked forward to with pleasure; he had the great gift of throwing himself into his subject, and making it intensely interesting, clear, and simple. We were quite carried away, and could have wished he would have gone on much longer—a feeling which is not often experienced. The professor was never a person who cared for creature comforts, and would go through his long day's work at the college without food. His keenest study was, I think, embryology. I remember well hearing how he constantly came back to the college after dinner and worked with the microscope till far into the night. On one occasion he never turned up at home for dinner, but this did not alarm Mrs. Fraser. However, when she waited in vain for him hour after hour, she started off at daybreak to look for him, and found him over his microscope, entirely oblivious of the fact that it was about 4 a.m., and that he had been at work since the previous afternoon. All who knew him will mourn his loss, but especially the women students to whom he was always such a staunch ally. It seems as if our own personal feelings were too deep for expression, while we offer our most heartfelt sympathy to Mrs. Fraser.

WILLIAM ARTHUR FOXWELL, M.A. M.D.CANTAB., M.SC.BIRM., F.R.C.P., LOND.,

PROFESSOR OF THERAPEUTICS IN THE UNIVERSITY OF BIRMINGHAM; SENIOR PHYSICIAN TO THE QUEEN'S HOSPITAL.

WE much regret to record the death of Professor Foxwell of Birmingham, which occurred at the Warneford Hospital, Leamington, on August 4th, as the result of a bicycle accident. According to the reports in the local papers,

Professor Foxwell was bicycling on the evening of August 1st near Warwick, when a dog rushed at the bicycle and threw him off so that his head struck the kerbstone. He was picked up and removed in an unconscious condition to the Warneford Hospital where everything possible was done for him, but he died on the morning of August 4th without having recovered consciousness. He was seen during his illness by his colleagues, Professor Bennett May, Professor Jordan Lloyd, and Dr. Kauffmann, and received the greatest kindness and care from the staff and authorities of the Warneford Hospital.

Professor Foxwell, who was 56 years of age, was born at Shepton-Mallet and was a son of Mr. Thomas Somerton Foxwell of Weston-super-Mare. His early education was obtained at Queen's College, Taunton, whence he passed to St. John's College, Cambridge, and there he graduated M.A. and M.D., taking a distinguished place in the Natural Science Tripos and in the medical examinations. He continued his medical studies at St. Thomas's Hospital and at Vienna. After graduating he became in succession House-Physician at St. Thomas's Hospital, Junior Resident Medical Officer at the Children's Hospital, Pendlebury, and Resident Clinical Assistant at the Brompton Hospital for Consumption. In 1884 he was appointed Resident Pathologist to the General Hospital, Birmingham, where he subsequently held the offices of Resident Medical Officer and Assistant Physician, but a vacancy occurring on the full staff at the Queen's Hospital he was elected Physician to that hospital in 1889. While at the General Hospital he was also Visiting Physician to the Jaffray Suburban Chronic Hospital, Pathologist to the Birmingham Hospital for Women, and Demonstrator of Medical Pathology at Queen's College. At his death he was Senior Physician to the Queen's Hospital and Professor of Therapeutics in the University of Birmingham. In 1896–8 he was Examiner in Medicine to the University of Cambridge.

He delivered the Bradshaw Lecture before the Royal College of Physicians in 1899, and the Ingleby Lecture at Queen's College, Birmingham, in 1892. He was the author of many contributions to the medical press and of a volume of well-written *Essays on Heart and Lung Diseases*, published in 1895. His Bradshaw Lecture on the Causation of Functional Heart Murmurs was well received, and the views expressed in it have been widely adopted. He was at one time Editor of the *Birmingham Medical Review*, and for many years Librarian of the Medical Institute, of which he was President when he died. He had recently the honour of being Vice-President of the Medical Section at the Annual Meeting of the British Medical Association at Belfast.

Professor Foxwell was a highly educated man, possessed of sound learning, and deeply interested in his profession; he was accustomed to think out and carefully expound the problems of the bedside, and those he taught appreciated his thoroughness and earnestness. Perhaps he was at his best as a clinical teacher, and the Birmingham School will feel his loss deeply. He took infinite pains with his clinical clerks, and insisted upon their work being done regularly and carefully, but it is pleasant to know that this strictness did not deter students from wishing to work for him, for there was no one whose appointments were more sought after. When the late additions were made to the buildings of the Queen's Hospital, it was due to Professor Foxwell's initiative that a roof ward, only partially covered and otherwise entirely open to the air, was constructed, and this experiment has now been tried for a year with a considerable amount of success in the treatment of many diseases other than tuberculosis.

Professor Foxwell married in 1889 Mrs. Pollock, daughter of the late Mr. Charles Hollins of Torquay, and leaves a widow and one daughter. He was buried at Olton Monastery Cemetery on August 6th, according to the rites of the Church of Rome. In addition to members of the family and personal friends, the funeral was attended by Professors Poynting and Saundby, representing the University of Birmingham; Mr. Albert Lucas, representing the British Medical Association; Mr. Leonard Gamgee, the Medical Institute; Mr. Hulme, the General Superintendent, Professor Jordan Lloyd, Professor Morrison, Professor Priestley Smith, Dr. Kauffmann, Dr. Stanley, Dr. Purslow, and Mr. Billington, for the committee and staff of the Queen's Hospital; Dr. T. W. Thursfield, for the committee and staff of the Warneford Hospital, Leamington; as well as a large number of members of the medical profession.

Professor JORDAN LLOYD, Senior Surgeon to the Queen's Hospital, Birmingham, writes: It is only a few weeks short of twenty years since Arthur Foxwell and I became associated as colleagues on the staff of Queen's Hospital, and during the whole of that period our friendship has been imperturbed, and my affection for him has continuously deepened. He was one of the strongest members of the hospital staff—skilful as a physician, kindly as an attendant, thoughtful as an investigator, honest as a man, wise as a counsellor, loyal as a colleague, earnest as an administrator, and staunch as a friend. His ideals in all things were lofty and inspiring; his sense of duty rigid and inflexible. He delighted in the true and the natural; he fought the false and despised the meretricious. His faith in the future of scientific medicine was unbounded. Nothing was too small for his notice, nothing too large for his mastery. He was a great clinical teacher. Many of the best students of our medical school attached themselves to him in some capacity or other in his hospital work. Although of gentle and kindly disposition, he was a stern master; quick to appreciate and encourage industrious effort in a junior; intolerant of slackness or indifference in every one. His loss to the profession is great, and his place will not be filled by any one man.

Dr. KAUFFMANN, Senior Physician to the Queen's Hospital, writes: The early death of Dr. Foxwell is an enormous loss to the profession in Birmingham, and in particular to the Queen's Hospital. I have no intention of dilating upon Dr. Foxwell's eminence as a physician. Besides his published works, which bear ample testimony to his powers of observation, and of mature and judicious reflection, the experience of all who came into contact with him over medical matters must be unanimous as to his ability and deep learning; and his evident culture and refinement could not fail to strike one even in the shortest conversation. But as a man he stood even higher, if possible, than as a physician, and I feel impelled to say a few short words on this rare character. Dr. Foxwell was not endowed with the gift of "popularity," and at first meeting he might to some appear to be reticent. His fine qualities were reserved for those with whom he became more intimate, and the first revelation of them never afterwards disappointed one. Dr Foxwell was humorous, and at times sarcastic; but his sarcasm was never unkind and never rankled. He was, indeed, too humane and sensitive and of too great self-control willingly to hurt another's feelings; and, if ever he did so unwittingly, it must have been rare indeed. Probably every one of his colleagues has had occasion to differ from him on one point or the other—strongly, perhaps—for Dr. Foxwell was not the man to yield from a position which he held to be right, and such a position he was used to maintain with all his power. But none ever came away from a fight with him bearing a feeling of rancour. Respect for his character and a tendency to revise one's own judgement in the light of his reasons were the feelings brought away from such a conflict. But, though he was stern and inflexible when occasion, to his mind, required it, he was essentially a most lovable man, and one to whom, when in a difficulty, one could appeal with the certain feeling that he would advise one on the course which was morally right. For he was an idealist who sought always for what is true and good and pure, and it is difficult to come across a man who in the pursuit of what is right so completely sinks all self-interest as did Dr. Foxwell. We mourn him deeply, not only as a wise physician, but as a faithful friend, a true guide in difficulties, and a man of rare courage and loftiness of aim.

ALEXANDER R. MACKENZIE, M.D.,

FORTROSE.

BY the sudden death of Dr. Mackenzie, of Fortrose, on August 4th, the medical profession in the North of Scotland has lost one of its oldest members.

He was born in Inverness seventy-nine years ago, and studied medicine at Glasgow University, taking the degree of M.D. in 1851 and the diploma of L.R.C.S.Ed. in

the same year. After graduating it was Dr. Mackenzie's intention to proceed to China, but Dr. Tulloch, who was then practising in Fortrose, offered him an assistantship, which he accepted, and on Dr. Tulloch's death he succeeded to the practice, which at that time was a very extensive one, embracing the whole of the district known as the Black Isle, in Ross-shire. He practised in this neighbourhood for over fifty years, and to celebrate his jubilee as a medical practitioner the Northern Counties of Scotland Branch of the British Medical Association, of which he was for many years a member, entertained him at a complimentary dinner. He was Medical Officer of Health for the burgh of Fortrose, and parochial medical officer for it and several of the surrounding parishes. He was a keen volunteer, retiring as Surgeon-Lieutenant-Colonel several years ago. He took a deep interest in public affairs, having served for many years both on the town council and School Board, and was for many years chairman of the latter body. He was a Justice of the Peace for Ross-shire.

Dr. Mackenzie, during his many years of professional life, gained the esteem and affectionate regard of the community in which he lived. Mrs. Mackenzie died some years ago, but he is survived by one daughter, to whom the sympathy of the profession in the North of Scotland will be readily extended.

ANDREW JAMES DUNCAN, M.D.Edin.,

CONSULTING PHYSICIAN, DUNDEE ROYAL INFIRMARY.

THE medical profession in Dundee has lost one of its senior and most esteemed members in the person of Dr. Andrew James Duncan, of Nethergate House, who died in the early part of last month from cerebral haemorrhage. He was a grandson of the Rev. Dr. Andrew Duncan, of Raths—a moderator of the General Assembly of the Church of Scotland, and for long its principal clerk—and was born in India, where his father was in the service of the old East India Company. His general education he received at home, and on its completion entered the medical faculty of the University of Edinburgh, where his career as an undergraduate was one of considerable distinction. He received the degree of M.D. in 1865, and in the same year became a Licentiate of the Royal College of Surgeons of Edinburgh. After this he put in a further year of study on the Continent, partly in Paris, partly in Vienna, and then, returning to Scotland, settled down in Dundee. In course of time he acquired an excellent practice and took a leading place among his professional brethren, and held several appointments. These included positions on the staff both of the Dundee Eye Institution and the Dundee Royal Infirmary. The former he held down to the time of his death, and ophthalmological work also occupied him for a time at the infirmary. He served the institution also in various other capacities, and at the time of his death was Consulting Physician and one of its eighteen directors or governors.

Dr. Duncan took a keen interest both in the scientific and practical sides of his profession, and attached considerable importance to frequent intercourse between medical men both on a social footing and for the purposes of professional discussions. His zeal, moreover, in this direction was not merely of the academic order; the Forfarshire Medical Association owes much of the position which it now occupies to the work which he did for it during many years as secretary, and to the ability with which he furthered its aims and objects during the earlier days of its existence. The British Medical Association likewise enjoyed a corresponding measure of his esteem and support, and at one time he held office as President of the Dundee Branch. Dr. Duncan was a careful and able physician and a most genial companion; a refined man, whose memory will always be held in the deepest respect by all who enjoyed his acquaintance and friendship.

CHRISTIAN WILLIAM BRANCH, M.B., C.M.Edin.,

MEDICAL OFFICER, KINGSTOWN AND COLONY HOSPITAL, ST. VINCENT, W.I.

CHRISTIAN WILLIAM BRANCH, M.B., C.M.Edin., was born in Basseterre, St. Kitts, on April 12th, 1870. His father and maternal grandfather took the degree of M.D. in the University of Edinburgh. The first colonial ancestor of the family to which he belonged settled in Barbados more than a century and a half ago. Christian Branch graduated in the Edinburgh University in August, 1893. At the end of the second summer of his curriculum he received the Senior Medal for Botany. He acted for a short time after his graduation as one of the Demonstrators of Anatomy in the University. He wrote numerous letters on various subjects to this and other medical journals, and was a contributor also to certain non-medical periodicals. His two longest papers were a monograph on Yaws, published by the Liverpool School of Tropical Medicine; and an essay on the Carib Tools to be found in the Lesser Antilles, printed by the Smithsonian Institution in Washington. He took great interest in hygiene, and wrote a *Primer of Tropical Hygiene* for use in West Indian Schools, which was printed at the expense of the Government of St. Vincent. Last year he attended the London School of Tropical Medicine, his fees having been paid by the St. Vincent Government, and obtained the Certificate with honours in Tropical Medicine. He was, during his short medical career, a District Medical Officer under the Governments of the Islands of Tortola, Nevis, St. Kitts, and Inagua, and was made the Medical Officer of the Colonial Hospital and Kingstown Medical District in St. Vincent in March, 1902. His death at the early age of 39, which took place in Kingstown, St. Vincent, on June 12th, was sudden, and was due to disease of the heart. He had operated at the hospital on June 9th, and fainted in the street in the evening of the same day. While talking with a friend three days after he suddenly fell back dead.

Christian Branch's reputation in both surgery and practice of physic was very high in the West Indies. He had had great success in ovariotomy and hysterectomy operations, and his method of treatment of ankylostomiasis by larger doses of thymol than had hitherto been considered safe has been generally adopted in those islands. It is mentioned in Dr. Senn's *Surgical Notes*, 1903, and Dr. Senn there spoke of him as "an earnest, enthusiastic and progressive man." He rendered good service to the people of St. Vincent in pointing out the real nature—anthrax—of an epidemic that broke out among the cattle soon after his arrival in that island, and he afterwards assisted Professor Annett in inculcating a knowledge of the causation of the malady and the precautions to be adopted against it. He was the delegate from St. Vincent to the Quarantine Conference, held in Barbados under the direction of Dr. Thomson, who represented the Colonial Office on that occasion. It was owing to Christian Branch's skill and devoted efforts that yellow fever, which had been imported from Barbados into St. Vincent, did not spread in the latter island. His arrival at St. Vincent, just before the eruption of the Souffrière, gave him his first chance of winning the love and esteem of the people of that island—a love which became stronger as each year of the seven that he was to spend with them passed by. In Vincent, as is well known, 2,000 lives were lost in the awful night of May 7th, 1902. The number of the wounded and dying brought into the town and crowded into the hospital was, of course, very great, and his devotion to the sufferers under his care appealed at once to the hearts of all classes of the community.

Dr. C. Branch gained the love of his colleagues and the people in every island in which he lived. During his short medical career he was presented with three addresses, expressing the regret of the people that he was leaving them.

His funeral was Masonic, and was attended by the largest procession of mourners, from the highest to the lowest classes in the community, ever seen in the island. Very many of the congregation inside the densely-packed little cathedral could not restrain their tears.

As a last proof of their love, the council of the island unanimously asked that a gift of £200 should be presented to his widow, as a token of the sympathy of the people of St. Vincent with her and of their appreciation of his worth.

THE English Tuberculosis Exhibition is now at the White City, having been formally declared open by Lord Balfour of Burleigh on August 6th. The scheme of the exhibition remains unaltered, but the arrangement of the different object-lessons has been modified from what it was when the same exhibition was in progress at the Art Gallery, Whitechapel.

Universities and Colleges.

UNIVERSITY OF LONDON.

Meeting of the Senate.

A meeting of the Senate was held on July 21st.

Recognition of Teachers.

The following were recognized as teachers in the subjects and at the places indicated:

St. Bartholomew's Hospital Medical School.—Dr. Robert Jones (Mental Diseases), Mr. Sydney Richard Scott (Aural Surgery), Dr. Horatio G. Adamson (Dermatology).

St. Thomas's Hospital Medical School.—Dr. W. J. R. Simpson, C.M.G. (Hygiene).

London School of Tropical Medicine.—Colonel A. W. Alcock (Medical Zoology).

Lister Institute of Preventive Medicine.—Mr. J. C. G. Ledingham, Dr. G. F. Petrie, and Mr. J. Henderson Smith (Bacteriology).

Hospital for Sick Children.—Mr. Oswald L. Addison (Clinical Surgery).

National Hospital for the Paralysed and Epileptic.—Dr. G. Morgan Holmes (Clinical Medicine).

Royal London Ophthalmic Hospital.—Dr. William Ilbert Hancock (Ophthalmic Surgery—Clinical).

B.Sc. Honours Degree in Human Anatomy and Morphology.

The following special courses were approved as subjects of special study in connexion with the B.Sc. (Honours) degree in human anatomy and morphology for internal students in 1910 (see Red Book, September, 1908, p. 208):

I. *Special Subjects.*—Professor Peter Thompson (King's College), Development of the Heart; Dr. W. Wright (London Hospital) Craniology; Dr. C. Addison (St. Bartholomew's Hospital), Human Abdominal Morphology.

II. *Courses of Practical Embryology.*—Mr. R. Assheton (Guy's Hospital), Professor J. P. Hill (University College), Dr. R. J. Gladstone (Middlesex Hospital), Professor Peter Thompson (King's College.)

III. *Vertebrate Morphology.*—Mr. G. Parsons (St. Thomas's Hospital), Dr. H. W. M. Tims (Charing Cross Hospital), Dr. J. P. Hill (University College), Dr. W. Wright (London Hospital).

IV. *Cytology.*—Professor J. B. Farmer (Imperial College of Science and Technology).

D.Sc. Examination in Physiological Chemistry (Internal).

It was reported that the degree of D.Sc. in physiological chemistry had been conferred upon Mr. Percival Hartley, of the Lister Institute of Preventive Medicine, who had submitted a thesis, entitled "On the Nature of the Fat contained in the Liver, Kidney, and Heart, Part II." In addition to his thesis, Mr. Hartley submitted several papers contributing to the advancement of science.

Francis Galton Laboratory for National Eugenics.

A report by Professor Karl Pearson showing the progress of the Francis Galton Laboratory for National Eugenics during the past sixteen months was presented. It stated that much labour had been bestowed on the study of pedigrees and the collection and collation of information on various aspects of heredity and environment; numerous lectures had been delivered and papers published, not only by members of the laboratory staff, but by other contributors to its work. The Senate voted their cordial thanks to Sir Francis Galton for a further donation of £500 for the maintenance of the laboratory, and recorded their high appreciation of the services rendered by Professor Pearson, under whose supervision the work is carried on. Mr. David Heron and Miss E. M. Elderton were reappointed respectively Galton Research Fellow and Galton Research Scholar for a year from February next.

Date of Entry for the M.D. Degree.

It was resolved that in and after the session 1910–11 the regulations for internal and external students in the Faculty of Medicine be amended by the substitution for the regulation contained in the fourth paragraph on page 154 of the Red Book, and in the fourth paragraph on page 216 of the Blue Book, September, 1908, of the following:

> In Branches I and IV, candidates (other than those who present a thesis) for the July examination must apply to the Academic or External Registrar for forms of entry on or before May 20th, which must be returned not later than June 1st; and candidates (other than those who present a thesis) for the December examination must apply for forms of entry on or before October 20th, which must be returned not later than November 1st. The corresponding dates for application for, and return of, forms of entry for candidates in Branches II, III, V, and VI, and candidates in other branches who present a thesis, are April 20th and May 1st for the July examination, and September 20th and October 1st for the December examination. Forms of entry must be returned duly filled up accompanied by the proper fee, and by certificates, as enumerated below, for the branch concerned.

D.Sc. Examination in Zoology (External).

The degree of D.Sc. in zoology has been conferred upon Mr. John Stephenson, M.B. (Victoria University of Manchester). Mr. Stephenson presented a thesis on studies on the aquatic oligochaeta of the Punjab, together with some further paper contributing to the advancement of science.

King's College Transfer Commission.

September 1st, 1909, is the appointed day in so far as the King's College, London (Transfer), Act refers to King's College Hospital and its medical school.

Chairmen of Committees.

The following have been appointed chairmen of the committees indicated for the year 1909-10: *Council of External Students*, Dr. S. Russell Wells; *Brown Animal Sanatory Institution Committee*, Sir William Church, Bart.; *Committee of Medical Members*, Dr. Frederick Taylor.

Advanced Lectures in Physiology.

The following scheme of advanced lectures in physiology for the session 1909–10 has been approved:

The University (Physiological Laboratory): (1) Eight lectures by Dr. G. A. Buckmaster and Mr. J. A. Gardner during first term, October-December, 1909, on Tuesdays at 5 p.m. (Title not yet announced). (2) Eight lectures by Mr. W. B. Hardy during second term, January-March, 1910, on Tuesdays, 5 p.m. (Title not announced.) (3) Eight lectures by Dr. N. H. Alcock on the physiology of the peripheral nerves, during the third term, May to July, 1910, on Tuesdays at 5 p.m.

University College.—(4) Eight lectures during first term, October to December, 1909, on Fridays at 5 p.m., by Dr. E. H. Starling, on recent advances in the physiology of digestion. (5) Eight lectures by Dr. W. M. Bayliss during the second term, January to March, 1910, on Fridays at 5 p.m., on fundamental phenomena in physiology. (6) Eight lectures by Dr. S. B. Schryver during the third term, May to July, 1910, on chemistry of chlorophyll on Fridays at 5 p.m. (7) Eight lectures during the third term, May to July, 1910, on physiology of the brain, by Dr. W. Page May on Thursdays at 5 p.m.

King's College.—(8) Six lectures by Dr. A. Dendy, F.R.S., and Dr. W. D. Halliburton on the pineal and pituitary bodies during the first term, November and December, 1909, on Mondays at 4.30 p.m., commencing on November 1st. (9) Eight lectures by Dr. O. Rosenheim and Dr. F. S. Locke on recent progress in physiological chemistry, during the second term, January to March, 1910, on Mondays at 4.30 p.m. (10) Three lectures by Dr. F. W. Mott during the third term, May to July, 1910, on the influence of the cerebrum on speech.

Guy's Hospital.—(11) Eight lectures by Dr. E. L. Kennaway and Mr. J. H. Ryffel on the physiological significance of variations in the chief constituents of urine, to be given during the first term, October to December, 1909, on Wednesdays at 5 p.m. (12) Eight lectures on the physiology of the skin, by Dr. W. S. Pembrey, during the second term, January to March, 1910, on Wednesdays at 5 p.m. (13) Four lectures by Dr. J. S. Haldane, F.R.S., during the third term, May, 1910, on the secretion of urine, on Wednesdays at 5 p.m. (14) Four lectures by Dr. F. G. Hopkins during the third term, June, 1910, on the influence of organic chemistry on physiology, on Wednesdays at 5 p.m.

The date of the lectures will be announced later.

Courses numbered 1-7, 9, 11, and 12 of the scheme have been recognized as advanced lectures, which a candidate at the B.Sc. (Honours) examination in physiology may name for part of his practical examination.

The following candidates have been approved at the examinations indicated:

Second M.B. (*Part II*).—Helen P. Barnes, G. Barratt, Margaret M. Basden, W. Butterfield, G. C. Chubb, D.Sc., A. J. Clarke, D. A. Davies, I. M. Davies, J. L. Davies, *a* M. C. F. Easmon, St. Mary's Hospital; G. E. Elkington, A. Evans, Maud F. Forrester-Brown, G. E. Genge-Andrews, W. S. George, *a d* J. T. S. Gibson, St. Mary's Hospital; W. M. Glenister, N. F. Graham, *a b e* T. C. Graves, University College; *c* G. Hadfield, St. Bartholomew's Hospital; *a f* T. E. Hammond (scholarship in Anatomy), St. Bartholomew's Hospital; H. W. Hills, B. W. Howell, C. M. Ingoldby, J. C. Jefferson, W. H. Kauntze, R. H. Liscombe, J. H. Lloyd, M. D. Mackenzie, P. H. Mitchener, W. H. Parry, D. B. Pascall, G. H. Pearson, T. H. Phillips, S. B. Radley, N. R. Rawson, D. Ross, S. P. Rowlands, G. W. Shore, H. K. V. Soltau, D. B. Spence, *c* W. Steuart, St. Bartholomew's Hospital; J. Taylor, E. A. Tozer, Catherine V. Turner, A. W. Venables, T. D. Williams, E. A. Wilson, B. Woodhouse, W. W. Woods, *c* C. H. Attenborough, King's College; R. F. Bolt, P. V. Early, R. H. Hodges, C. E. S. Jackson, A. C. McAllister, V. E. Negus, W. Simpson, R. W. Spence.

M.D. (*Medicine*).—E. L. Ash, E. F. Finch, T. M. Hardy, P. Hick, *g* A. J. S. Pinchin, B.S., St. Thomas's Hospital; E. J. Wyler.

M.D. (*Mental Diseases and Psychology*).—*g* H. De Vine, University College, Bristol.

M.D. (*Midwifery and Diseases of Women*).—*g* E. J. C. Dicks, St. Mary's Hospital; P. W. Hamond, Dorothea C. Maude, Marian Mayfield, Eleanor W. Perkins, Mary F. Taylor, Ida C. Tengely, Edith L. Young.

M.D. (*State Medicine*).—Dora E. L. Bunting, H. J. Cates, C. L. Lakin, G. E. Oates.

M.D. (*Tropical Medicine*).—J. C. M. Bailey, F. F. Elwes, I. D. Jones.

M.S.—S. G. Barling, V. Z. Cope, B.A., M.D., A. J. Walton, B.Sc.

a Passed with distinction in Anatomy.
b Passed with distinction in Physiology.
c Passed with distinction in Pharmacology.
d Awarded scholarship in Physiology.
e Awarded scholarship in Pharmacology.
f Awarded scholarship in Anatomy, and qualified for that in Physiology.
g University medal.

ROYAL UNIVERSITY OF IRELAND.

FIRST M.B.—*h*N. Beattie, P. L. F. G. Bennett, D. E. J. Burke, J. D. Carroll, *h*T. J. Costello, M. M. Davitt, W. S. Dixon, W. A. L. Dunlop, E. C. T. Emerson, T. J. Farrell, B.A., T. Fennessy, J. Garry, W. Gault, S. Geddis, *khec*aJ. G. J. Green, H. P. Hall, J. F. Herbert, T. W. G. Hogg, G. L. Kennedy, G. D. Latimer, J. H. Lawlor, T. J. Lydon, *fb*J. B. Lyle, W. S. Lynd, B.A., W. J. M'Cracken, W. M. H. M'Cullagh, W. MacDermott, *d*P. M'Donnell, H. M'Ilroy, J. P. M'Loughlin, M. T. MacMahon, *d*G. C. Maguire, M. Neilson, Eveline M. Noble, Mary J. O'Connor, B.A., E. J. O'Keeffe, *e*J. I. O'Sullivan, Edith Robinson, J. P. Robinson, *he*R. Shanahan, H. R. Sinclair, *lhea*T. Walker, M. J. Walsh, T. H. Wilson.

D.P.H.—*m*W. D. O'Kelly, *n*J. R. Gillespie, M.B., B.Ch., B.A.O., *n*R. W. Fisher, M.B., B.Ch., B.A.O., F. X. J. Callaghan, M.B., B.Ch., B.A.O.

a First class honours in Botany.
b Second class honours in Botany.
c First class honours in Zoology.
d Second class honours in Zoology.
e First class honours in Chemistry.
f Second class honours in Chemistry.
h Second class honours in Experimental Physics.
k Exhibition of £20.
l Exhibition of £10.
m First class honours and special prize of £10.
n Second class honours.

UNIVERSITY OF ABERDEEN.

THE following degrees were conferred at a meeting of the Senate on July 21st:

M.D.—*a*Williamina Abel, *b*T. C. Boyd, M.A., E. K. Mackenzie, C. J. R. Milne, Major I.M.S.

a Honours for thesis.
b Commended for thesis.

M.B., CH.B.—W. Allan, W. J. Calder, M.A., R. W. Chalmers, W. Chapman, D. Craig, R. G. Davidson, H. Duguid, R. W. Eddie, A. M. Geddes, W. I. Gerrard, Elizabeth McHardy, G. Macpherson, *c*G. S. Melvin, J. Rae, M.A., G. E. Shand, W. L. Stephen, F. W. Stuart, J. E. Thompson, R. Tindall.

c With second class honours.

The John Murray Medal and Scholarship was awarded to G. S. Melvin as being the most distinguished M.B. graduate of the year.

THE UNIVERSITY OF MANCHESTER.

ON Wednesday, July 28th, the medical graduation ceremonial took place in the Whitworth Hall of the Manchester University. The Vice-Chancellor of the University presiding. The following were presented for degrees by Professor J. Dixon Mann:

M.D.—*a*G. D. Dawson, *b*R. L. Ferguson, *b*A. E. Rayner, *b*Elsie M. Royle, F. P. H. Birtwhistle, T. M. Bride, H. R. Clarke, H. M. Crake, G. F. Porter, J. C. Smyth, T. W. Walker.

M.S.—E. A. Smith.

M.B., CH.B.—*c*F. H. Diggle, *c*J. Gow, *c*T. T. Higgins, *c*H. Platt, H. E. Allanson, R. J. Batty, Elsie Brown, W. A. Bullough, S. J. Clegg, D. I. Connelly, N. M'Donald, S. Mahamadi, Edith M. Marsden, C. B. Marshall, G. E. E. Nicholls, A. A. Smalley, N. Tattersall, R. H. Titcombe, J. F. Ward, F. G. Wrigley.

a Awarded gold medals.
b Commended for thesis.
c Second class honours.

In a short address the Vice-Chancellor said that an important change had been made during the past year in the medical examinations. Hitherto the First M.B. Examination had been held in June or July, practically at the close of the academic year, but it had now been arranged that the greater part of the examination should be taken in March at the end of the students' first winter session. This would enable the student to take the examination soon after concluding his lectures in physics, organic chemistry, and biology. The organic chemistry could also be made of a more practical character, while the student would be able to begin anatomy in his first summer session. The Vice-Chancellor also referred to the great advantage that the medical school now enjoyed by the closer connexion with the great hospitals. The Manchester Royal Infirmary had made provision for students on a most liberal scale and the Eye Hospital had also excellent working arrangements. It was unfortunate that the new St. Mary's Hospital in Oxford Road, which was now finished, had not funds available to enable its admirable premises to be opened, the Whitworth Street Hospital was quite inadequate.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved in the subjects indicated:

SECOND M.B., CH.B. *(all subjects).*—G. S. Bate, G. E. Sawdon.

SECOND M.B. *(Anatomy only).*—H. Harrison, D. S. Jones, H. C. Wright.

THIRD M.B., CH.B. *(General Pathology and Morbid Anatomy).*—P. S. Green, W. H. Parkinson, J. P. Stallard.

THIRD M.B., CH.B. *(Pharmacology and Therapeutics).*—A. E. Ainscow, K. D. Bean, R. Briercliffe, C. E. Butterworth, C. Davies, N. Duggan, A. W. Gaye, P. S. Green, H. Heathcote, *A. H. Holmes, L. W. Howlett, R. C. Hutchinson, R. A. Jackson, G. Lapage, W. H. Laslett, Jane C. Miller, M. Moritz, J. H. Nichol, W. Howarth Parkinson, W. Hoyle Parkinson, A. Reid, J. B. Scott, *W. A. Sneath, W. Stirling, J. S. B. Stopford, G. K. Thomson, J. Walker, W. Warburton, Charlotte E. Warner, G. Whitehead.

* Passed with distinction.

THIRD M.B., CH.B. *(Public Health).*—A. E. Ainscow, K. D. Bean, R. Briercliffe, C. Davies, N. Duggan, A. W. Gaye, P. S. Green, H. Heathcote, A. H. Holmes, L. W. Howlett, R. C. Hutchinson, R. A. Jackson, R. B. Jackson, G. Lapage, W. H. Laslett, Jane C. Miller, M. Moritz, W. Howarth Parkinson, W. Hoyle Parkinson, A. Reid, J. B. Scott, W. A. Sneath, W. Stirling, J. S. B. Stopford, G. K. Thompson, J. Walker, W. Warburton, Charlotte E. Warner, G. Whitehead.

D.P.H.—A. Baxter, F. Butterfield, R. J. Chapman, J. A. Fairer, D. P. M. Farquharson, C. C. Finlator, A. Grant, H. Herd, Harriet McCloghrey, Annie Mooney, Sheila M. Ross, Elsie M. Royle, B. Saul, H. G. Ward, H. Whitehead.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ORDINARY council, July 29th, 1909, Mr. Henry Trentham Butlin, D.C.L., president, in the chair.

Diplomas.

Diplomas of membership were granted to 86 candidates found qualified at the recent examination, and diplomas in public health were granted by the college in conjunction with the College of Physicians to 17 candidates found qualified at the recent examination. *(See list below.)*

Museum.

Mr. Cecil F. Beadles was appointed pathological assistant in the museum subject to re-election at the meeting of the council in July, 1910. Mr. Alban Doran was requested to advise regarding the gynaecological specimens in the museum in connexion with the revision of the pathological catalogue. An agreement between the college and the Royal Society of Medicine with regard to the odontological collection of the society was read and passed. By this agreement the above collection is to be transferred to the custody of the college. The specimens are to be kept with the odontological specimens already in the possession of the college as a separate series, and not dispersed through the museum. Mr. J. L. Payne, Mr. J. H. Mummery, Mr. W. A. Maggs, Mr. F. J. Bennett, and Mr. C. F. Rilet were appointed trustees of the collection. An honorary curator of the odontological collection will assist in its maintenance and enlargement. All specimens added to the series are to become the property of the college; and, in the event of the society desiring the return of the collection, only the specimens forming the collection at the time of transfer shall be returned, and not those added since the transfer. The college will be at liberty to terminate the agreement at any time after the expiration of five years on giving six months' notice to the society.

Egyptian School of Medicine.

Mr. R. J. Godlee was appointed visitor to the examinations of the Egyptian School of Medicine for the examinations to be held in December next.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Fellowship Examination.

THE following candidates have been approved at the examinations indicated:

FIRST FELLOWSHIP.—J. B. Dordi.

FINAL FELLOWSHIP.—J. Gordon, L. S. Machado, T. Murphy, F. Spicer.

CONJOINT BOARD IN ENGLAND.

THE following candidates, having been approved at all examinations, received the diploma of membership of the Royal College of Surgeons of England and the licence of the Royal College of Physicians of London on July 29th:

R. B. Abraham, G. G. Alderson, F. J. Aldridge, E. C. Alles, E. B. Allnutt, F. L. Angior, C. W. Archer, W. R. W. Asplen, J. D. Benjafield, R. H. Bharucha, T. K. Boney, J. M. Brito-Salazar, S. S. Brook, A. J. Brown, W. H. Cam, A. S. Cane, R. S. Carey, W. J. Chambers, K. S. Chasker, H. M. McC. Coombs, M. M. Cowasjee, R. L. Crabb, J. W. Cropper, C. H. Crump, F. J. Cutler, R. M. Dennys, G. V. Deshmukh, A. MacD. Dick, R. S. Doran, M. A. E. Duvivier, R. Fisher, R. H. W. Fisher, A. L. Fitzmaurice, P. L. Foote, J. C. Fox, A. G. V. French, S. Gordon, A. J. Graves, J. M. Hammond, T. R. Harvey, H. W. Heasman, J. S. Hopwood, A. H. H. Howard, D. Isaacs, J. E. Jackson, G. Jefferson, T. J. Johnston, D. Kennedy, M. H. Langford, W. Ledlie, R. J. B. Leney, J. T. Lloyd, H. McLean, R. H. S. Marshall, B. C. Maybury, E. Mayer, C. A. Meaden, J. C. W. Methven, W. J. Morton, J. A. Noble, P. D. Oakley, Paira-Mall, W. R. Parkinson, R. A. Parsons, F. C. Pridham, W. T. Quinlan, R. G. Riches, J. X. Robert, H. D. Rollinson, L. M. Routh, L. Russell, A. Ryland, I. Shorbagi, W. S. Simpson, H. Smale, W. J. Smith, W. D. Southern, C. G. Sprague, B. A. W. Stone, W. W. Treves, S. A. Vairakiam, J. van Schalkwijk, J. M. Weddell, T. H. Whittington, D. P. Williams, S. S. M. Wood, C. R. Woodruff.

The following candidates have been approved in the subjects indicated:

FIRST COLLEGE.

PARTS I AND II *(Chemistry and Physics).*—A. D. Anderson, W. Andrew, †G. Aspinall-Stivala, †H. W. Barnes, G. A. Batchelor, M. Bayumi, †C. A. Bernard, †A. C. O. Brown, S. Caplan, F. H. Cleveland, G. M. Coope, †T. H. Cresswell, D. L. Davies, R. M. de Mowbray, E. R. Dermer, C. K. G. Dick, *A. J. Drew, S. E. Elphick, †C. L. Emmerson, †A. G. B. Fenwick, V. Fox, J. W. Gilbert,

E. W. Griffith, H. Gwynne-Jones, J. G. Hanafin, †W. R. H. Heddy, C. L. Herklots, R. B. Hick, †A. M. Hughes, F. E. Johnson, R. B. Johnson, J. Kinnear, F. W. Lawson, †J. G. L'Etang, W. D. McDonald, †A. H. Manfield, R. C. Matson, C. J. D. May, *E. H. Morris, *J. C. Münch, *W. J. O'Kane, J. M. Parry, S. V. P. Pill, *K. C. Pitman, *A. S. Plant, †A. A. Prichard, W. R. Pryn, †G. Robinson, *C. W. Roe, J. T. Samuel, *C. P. C. Sargent, J. P. Shaw, †K. V. Smith, V. R. Smith, F. L. Spalding, J. M. Stack, W. A. Stewart, G. Stiell, †W. B. R. Stower, *E. A. Sutton, †F. Sykes, *H. J. H. Symons, T. H. Thomas, †A. G. Turner, †O. R. Unger, †A. R. Upton, C. N. Vaisey, P. P. Warren, †G. W. Watson, *G. H. D. Webb, †E. G. Wee, T. M. Wood-Robinson, P. V. Wynn-Werninck,

* Passed in Part I only. † Passed in Part II only.

PART III (*Elementary Biology*).—A. W. C. Bennett, W. McH. Binning, S. Caplan, P. R. Chevreau, W. L. Cockcroft, D. L. Davies, J. E. Davies, R. M. de Mowbray, C. T. J. Drobig, A. Green, J. G. Hanafin, C. L. Herklots, A. M. Hughes, F. E. Johnson, H. D. Lane, F. W. Lawson, A. H. Manfield, R. C. Matson, A. V. Moberly, A. S. Morgan, E. H. Morris, A. R. Muir, K. M. Nelson, W. J. O'Kane, W. L. Partridge, H. L. P. Peregrine, W. R. Pryn, P. J. F. L. Rathier du Vergé, C. A. Robinson, A. F. Salsbury, J. T. Samuel, V. R. Smith, F. L. Spalding, J. M. Stack, G. S. Stathers, G. Stiell, R. R. Sy-Quia, C. N. Vaisey, V. C. W. Vickers.

PART IV (*Practical Pharmacy*).—W. G. E. Allen, E. B. Argles, E. W. Atkinson, R. A. Banbury, M. H. Barton, H. R. Bastard, W. A. H. N. Bell, G. K. Butterworth, R. B. Campion, K. B. Clarke, R. C. Clarke, F. H. Cleveland, R. W. Davies, W. A. Dunn, R. Gamlin, F. Garratt, S. S. Greaves, S. W. Green, J. Greene, B. J. Hallowes, W. H. Harris, J. R. Hayman, W. R. H. Heddy, H. S. C. Hooper, J. Hughes, A. E. W. Idris, G. James, A. C. Jap, A. Jones, E. L. Jones, W. F. Jones, T. J. Killard-Leavey, C. Kingston, W. S. Lacey, J. G. L'Etang, F. McG. Loughnane, J. M. McIntosh, R. V. Martin, W. G. Masefield, C. H. Medlock, F. Meinertzhagen, H. L. Messenger, J. Millard, J. Neal, J. H. Newmarch, H. M. D. Nicoll, J. M. Parry, G. S. Phillips, A. T. Pitts, G. W. Pool, W. A. Rail, H. J. Rawson, W. A. Reynolds, E. L. N. Rhodes, Q. H. Richardson, G. D. Robertson, H. I. Shahin, J. G. Skeet, E. J. Staddon, H. Steinbach, C. H. Symons, W. E. Tanner, A. R. Taylor, C. H. S. Taylor, F. C. Tibbs, J. St. A. Titmas, H. Topham, L. E. Van Geyzel, C. G. C. Vawdrey, F. H. Woods.

D.P.H. (Both Parts).—A. Allison, H. Barr, J. A. Beamish, H. B. Bolus, C. H. B. Bradley, T. Evans, J. Fairley, R. M. Freer, W. E. Fry, H. W. Harding, R. A. P. Hill, T. E. Holmes, H. E. Littledale, W. St. C. McClure, K. S. Mhaskar, R. A. O'Brien, P. W. Spaull.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—C. C. Forsyth, S. E. Jones, J. McCagie, M. R. Dalal, B. M. Nanavutty, W. W. K. Duncan, F. G. Gibbs, E. A. Neilson, C. H. N. Baker, V. C. H. Dearden, J. M. Hiddleston, W. Ainsley, D. Chand, P. L. Manuel, A. Parker, J. B. Donaldson.

SECOND COLLEGE.—F. M. H. Sanderson, B. M. Nanavutty, H. W. M. Wallace, W. Elder, J. McFarlane, C. S. Ogilvy, W. C. Davis, N. S. Williams, C. E. H. Smith, R. Trotter, J. Mitchell, C. M. Willmott, W. S. Lindsay, H. A. Topalia, A. Hegarty, W. S. Durward, D. W. Woodruff, W. S. Rorich, R. Lockhart, W. L. Coullie.

THIRD COLLEGE.—M. B. Motafram, R. I. N. Martyn-Clark, E. D. Ellis, M. Greene, E. J. Fisher, P. C. Banerjee, E. P. Ghose, V. D. Nimbkar, H. E. K. Fretz, S. Hoashoo, H. G. Lamberty, C. K. Carroll, C. J. Evans, S. E. A. Acheson, Z. A. De Cruz, G. F. Walker, P. G. Phillips, M. R. Dalal, R. L. Hughes.

FINAL EXAMINATION.—E. D. Ellis, J. Reid, A. J. Kelsey, F. W. Milne, W. G. Forde, J. J. Huston, J. Muller, H. G. Ramsbottom, W. Taylor, S. G. Tibbles, J. E. R. Ramdeholl, E. Eccles, Maria S. Allen, K. Bhusham, E. W. Marsh, A. C. Tait, J. S. J. Stenhouse, J. K. Sharma, M. Henry, A. I. Luke, R. Massie, T. Sabastian, A. Singha, L. N. Robertson, N. C. Shierlaw, C. Trivedi.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

THIRD PROFESSIONAL.—*J. T. Duncan, A. E. Bedell, C. J. Bourke C. P. Corbett, J. Devine, I. A. Dowling, H. C. Gilmore, R. H. Hodges, C. J. Kelly, A. M. Lanphier, H. R. L'Estrange, H. M. E. H. McAdoo, P. McGrath, Miss A. H. Mullen, J. O'Kelly, W. A. Swan.

FINAL PROFESSIONAL.—*Miss A. H. Mullen, *H. S. Meade, R. H. Adams, P. H. Black, S. Blake, J. J. Corr, Miss I. M. Clarke, E. C. Deane, E. Dundon, J. Donoghue, B. W. Farrell, R. R. Faussett, J. W. Flood, E. A. Gregg, F. N. Harvey, W. Hederman, L. C. Johnston, T. J. Lyons, E. C. MacDermot, D. McCormack, J. Marmion, J. Menton, F. J. Morris, J. J. O'Connell, T. P. Seymour, A. Sheridan, J. M. Smyth, P. T. Warren, Miss C. F. Williamson, R. S. White, O. W. J. Wynne.

D.P.H.—C. H. Browne, A. H. Hardcastle, W. W. L. McLean, C. D. Outred, J. L. Prichard, L. E. Smith.

* With honours.

APOTHECARIES' HALL OF IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST PROFESSIONAL.—S. Carroll, J. A. Moloney.

SECOND PROFESSIONAL.—G. M. Mayberry.

FINAL.—E. Murphy, J. Stuart.

Public Health

AND

POOR LAW MEDICAL SERVICES.

VENEZUELAN VACCINATION DECREE.

ON May 22nd last the President of the Republic of Venezuela, General J. V. Gomez, issued a decree dealing with vaccination. The official gazette publishes the terms of the decree, the main features of which are as follows:

Vaccination and revaccination are declared to be obligatory on all the inhabitants of Venezuela, and all children must be vaccinated before attaining the age of 1 year. If unsuccessful the first time it is to be repeated one month later, and again at the end of the year if the second vaccination is unsuccessful.

Revaccination is obligatory at the 8th year. If this should have no effect it must be repeated one month later and again at the age of 10 if the second attempt is unsuccessful. In the case of persons successfully vaccinated between the ages of 1 year and 20 years vaccination shall be repeated after the lapse of eight years from the first vaccination. Special provision is made for obligatory vaccination in the event of small-pox epidemics in any part of the country. The civil authorities are entrusted with the carrying out of the regulations through the Health Commission (*Juntas de Hygiene*); official vaccinators are appointed, but a person may employ the services of any doctor he may prefer. An institute of vaccine is to be established under the charge of a medical director appointed by the Ministry of the Interior for the production and preservation of vaccine lymph, with a sufficient staff and all necessary apparatus for the preparation of lymph adequate for the needs of the whole Republic. Provision is to be made for the supervision of the institute and the inspection of the manufacture of the lymph. Doctors having private practices of their own may obtain gratis from the institute all the lymph they may require upon addressing a request in writing to the director. Sessions for the performance of gratuitous vaccination and revaccination must take place at least once a week in municipalities and parishes.

The health officers (Directores de Sanidas) in the ports shall not allow any passenger to disembark who is unable to produce evidence of vaccination successfully performed within the last eight years. No pupil who is unable to produce a certificate to the effect that he has been vaccinated or revaccinated within the periods laid down in the decree shall be admitted to any public or private seminary. The penal causes enact that those of age and all parents, guardians of juniors, and heads of institutions who do not comply with the regulations or cause them to be complied with shall be liable to the following penalties: A fine of 50 bolivares for a first offence, and for every month that passes without the fault being remedied another fine to an equal amount or imprisonment of proportional severity at the rate of one day's imprisonment to 5 bolivares. The fines are to be imposed by the civil authorities, and devoted to the development of the Institute of Vaccine.

THE SANITARY AUTHORITY AND PRIVATE PRACTITIONERS IN CASES OF INFECTIOUS DISEASE.

GENERAL PRACTITIONER.—Under Section 131 of the Public Health Act, 1875, a sanitary authority may provide for the use of the inhabitants of their district temporary places for the reception of the sick, and under Section 133 they may, with the sanction of the Local Government Board, contract with any person to provide a temporary supply of medicine and medical assistance for the poorer inhabitants of their district. A medical man whose two scarlet fever patients were removed on the instruction of the medical officer of health to a tent erected close to the patient's home, and who continued his attendance because the patient's father refused to apply for an order for the parish doctor, ought to be able to convince a county court judge that the sanitary authority should pay for the attendance, notwithstanding the fact that no direct order for him to attend was given by the sanitary authority.

IN 1907, during the celebration in Mysore of the annual State ceremonial called the Dasara, a health exhibition was organized as a section of the Mysore Industrial and Agricultural Exhibition. The Sanitary Commissioner with the Government of Mysore (Lieutenant-Colonel J. Smyth, I.M.S.) is arranging to hold a similar exhibition this year, to be opened on October 11th. The main object of the exhibition is educational; the exhibits will be classified and their uses will be explained by a special staff. Foreign exhibits should be forwarded through Messrs. King, King and Co., Bombay, or Messrs. Oakes and Co., Madras, and unless other instructions are given will be retained in the Health Museums of Mysore or Bangalore. Further information can be obtained from the Secretary of the Exhibition, Mysore.

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL.

THE offices of the British Medical Association and of the BRITISH MEDICAL JOURNAL are at 429, Strand, London.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DISINFECTION OF ROOMS.

A CORRESPONDENT asks to be informed as to a spray apparatus for disinfecting rooms after cases of infectious disease. It should be capable of reaching the ceiling of lofty rooms without the use of a ladder, and should be portable.

MOTOR CARS FOR MEDICAL MEN.

CYMRO asks for advice in the selection of an 8 or 10 horse-power motor car for use in a rough hilly district.

PALATABLE DIABETIC BREAD.

CYMRO asks for suggestions as to a palable substitute for bread in diabetes?

*** Unfortunately diabetic breads are generally palatable in inverse proportion to their freedom from starch, but there has been a great improvement in such articles in recent years. Of course, there is no accounting for taste, and what one person likes another may declare to be uneatable, but we have found the Protene Company's diabetic biscuits, Callard's Casoid biscuits and Prolacto bread, and Peek and Frean's "Tilia" diabetic biscuits appreciated where it is necessary to give a diet containing a minimum quantity of carbohydrates. Where a certain amount of starch can be assimilated it is better to give a definite fixed quantity of ordinary white bread made into toast. It should always be remembered that the successful dieting of diabetic patients must be quantitative as well as qualitative.

ANSWERS.

LICENTIATE.—The degree referred to gives the same standing as that conferred in the usual way by an ordinary British university. It has the advantage over the other degree mentioned that it is registrable.

MEAT MINCER.

DR. WILLIAM MAIR (Innellan) writes: "W. H." would probably find a Nye mincer useful. It can probably be obtained at any good ironmonger's; I know that it can be obtained through Messrs. Gray and Sons, George Street, Edinburgh.

DR. CHAS. H. CLARKE (Leicester) writes in reply to "W. H.": The masticator supplied by Westby, Humberston Gate, Leicester (5s. 6d.), would answer the purpose. I have three patients constantly using them. They are easily cleansed, not unsightly, and are used at the table.

LA BOURBONNE AND RHEUMATOID ARTHRITIS.

DR. T. GERALD GARRY (Roncegno) writes, in reply to "P. J. M.," to say that excellent results are obtained at the natural arsenical iron baths at Roncegno, S. Tyrol, in the treatment of rheumatoid arthritis.

NECROMANCY, CHARMS, ETC.

DR. PHILIP MIALL (Knaresborough) writes: If Dr. Simons consults *Primitive Culture*, by E. B. Tylor, he will find abundance of the information he wants, besides references to other works on the same subjects. *The Golden Bough*, by J. G. Fraser, will probably supply something.

RODAGEN IN EXOPHTHALMIC GOITRE.

J. D.—References to the use of rodagen (a white powder and tablets consisting of the dried milk of thyroidectomized goats, with 50 per cent. of milk sugar to improve its keeping qualities) will be found in the BRITISH MEDICAL JOURNAL, vol. ii, 1905, p. 1251, and vol. i, 1906, p. 326. (See also Martindale's and Westcott's *Extra Pharmacopoeia*, thirteenth edition, 1908, p. 903.)

COCAINE IN PARTURITION.

DR. E. PARKER YOUNG (London) writes, in reply to "Stockton," that he has frequently used a 10 per cent. solution of cocaine soaked in cotton-wool and applied to a rigid os uteri with splendid results, the os dilating rapidly, and the patient able to bear down when the pains come on. He repeats the application occasionally as required, and has for years adopted the above treatment effectually.

DR. WILLIAM DONOVAN, M.D. (Birmingham), writes: May I venture to advise those who are thinking of using cocaine to relieve rigid os and other troubles arising in the parturient female to take *Mr. Punch's* advice to those about to marry —*Don't?*

DR. W. SMITH (Gateshead-on-Tyne) writes: "Stockton" will find the best results from cocaine in the cases he mentions if he uses it in conjunction with chloral internally. I will give a description of a typical case in which I have used this combination: Primipara, aged 30. One is called at midnight and told that she has had pains for forty-eight hours, has lost two nights' sleep, is losing strength, and that the waters are broken, but the pains seem to be doing no good. On vaginal examination the os is felt to be about the size of a shilling, very rigid and hard, the waters are broken, and the head is in the first vertex position. The patient is very restless and irritable, asking somewhat forcibly if nothing can be done. She is kept in bed and given syrup of chloral ʒij. She will probably go to sleep and thus gain strength. On calling about four hours later the pains are more effectual, and the os is slightly more dilated. A 1-gr. suppository of cocaine is now rubbed well over the os, both inside and outside, and it is felt to dilate, sometimes in a manner which suggests a tear. The action of cocaine is to paralyse the nerve endings and thus abolish pain, and when the muscles do not feel pain they relax and dilatation is produced. A good dose of Bovril will now do good, and the head is soon on the perineum, and this looks like rupturing. Another suppository of 1-gr. cocaine is now used to it, and for about one-third inside the vagina, and the probability is that the child is born without a rupture of the perineum. Should this take place, it is an easy matter to stitch it, as sensation is abolished. In my opinion, the cocaine has again acted here by abolishing pain, and thus causing relaxation of the muscles. The advantages of this method are (1) a fairly strong and non-irritable patient, instead of a weak and irritable one; (2) no dilating bags are required, and thus one element of sepsis is done away with.

This is a typical case, but if forceps have to be used, these procedures tend to make it a less difficult task, and I have already mentioned the advantage in the case of a ruptured perineum. There is one disadvantage, not great, and that is that one's own finger becomes quite anaesthetic by the time the second suppository is used.

LETTERS, NOTES, ETC.

CORRECTIONS.

IN our report of the proceedings of the Central Midwives Board, on p. 181 of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 7th, 1909, the third sentence of the leaflet on ophthalmia neonatorum begins "It generally arises," this should be "The disease generally arises."

IN the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of April 17th, page 178, column 2, line 21, the words "in the same part" should have been "in the same patient."

INTRA-ABDOMINAL HAEMORRHAGE ASSOCIATED WITH LABOUR.

DR. PHILIP G. BORROWMAN, M.D. (Dunreggan, Troon) writes: With reference to Mr. Maurice Barber's case of intra-abdominal haemorrhage reported in the JOURNAL of July 24th, I remember twenty-six years ago receiving an urgent message to see a girl of 18 or 20 who had been taken suddenly ill. On arrival at the house I found that she was dead. I was told that while in apparently perfect health she complained of sudden pain in the lower part of the abdomen, became blanched, and fainted, and in a few minutes she was gone. At the *post-mortem* examination the abdominal cavity was found full of blood, and a longitudinal tear, about half an inch long, was discovered in the left common iliac vein. The vessel was apparently healthy, and no explanation was forthcoming.

INOCULATION FOR CHICKEN-POX.

DR. JAMES C. HOYLE (Upham, Hants) writes: I cannot help thinking that Dr. Smallpeice's very interesting experiment (related in the JOURNAL of July 31st, p. 268) does not prove as much as it might have done if one of the children had been inoculated on April 7th and the other not so treated. Then we would have had a definite example and a control case. The fact that the eldest child did not develop the disease at the same time as the youngest suggests a natural tendency to immunity in the absence of strict isolation, of which there is no mention; in fact, it is not certain that he

would have contracted the disease at all. Nevertheless, the value of inoculation—bearing in mind the case of the sister disease, variola—is worth remembering, particularly in severe epidemics.

Rubber Tubing over Urethral Dilators.

Dr. W. S. Dickie (Middlesbrough) writes: In the Memoranda on page 204 of the Journal of July 24th there is a reference by Dr. A. MacLennan to the use of thin rubber tubing over the blades of Kollmann's urethral dilators. The use of such coverings has, I think, been customary for years, and the makers of urological instruments supply rubber sheaths in sizes to suit the various dilators.

Amenorrhoea without Apparent Cause.

J. H. H. H. (Belize, British Honduras) writes: A. B., a Spanish woman, aged 35, first commenced to menstruate at 14½ years; three months later she was married. Her periods were quite regular until she was 20 years old, then she menstruated once every three months; when 24 years old they stopped entirely, and have been absent up to the present time. She is in excellent health. She has had no children, but sexual functions are good. She is magnificently built, and does not feel the slightest discomfort or pain at any time; she is robust, and far from anaemic. There have never been any signs of vicarious menstruation. A thorough examination revealed nothing abnormal. Entire absence of the menstrual periods for upwards of eleven years without apparent cause is most interesting, and the fact that there are no signs of constitutional disturbance goes to make this case unique.

An Operation for Varicose Veins.

Major Duer, I.M.S. (Maymyo, Burma) writes: I saw this operation performed several times in the United States. It appears to have advantages, but I have had no opportunity of trying it myself. It requires one special instrument, which consists essentially of a wire ring about half-an-inch in diameter, set at an angle of about 120° on a slender shaft and handle of a certain degree of stiffness, about 18 in. long. It could be readily made out of a piece of moderately stiff wire. We will suppose the entire internal saphenous vein to be varicose. A small incision is made over the saphenous opening, and the vein is isolated and divided between two ligatures. The distal end of the vein is passed through the ring of the special instrument, which is then worked down subcutaneously along the vein, tearing through its tributaries, a manœuvre which is effected without difficulty. No appreciable amount of blood escapes from the ruptured tributaries. When the instrument has been worked down as far as can be done conveniently (a foot or more), a short incision is made over its ring, and the isolated vein is withdrawn. It is again threaded through the ring, and the same procedure is repeated. In this way the entire internal saphenous vein is removed, only three or four small incisions being required.

Cold Spots and Tactual Sensation.

Dr. John J. Hanley (Hull) writes: The following circumstance may prove more interesting to physiologists than to the profession generally, yet it will be noted as a possible basis for further observation bearing on the correlation of cold spots to tactual sensation. A patient of mine suffering from periodontitis, and who at my suggestion declined to have the tooth involved—the right upper lateral incisor—which had been but recently plugged with gold filling for a small cavity, extracted, as advised by his dentist, placed himself entirely in my hands. My view that the tooth could and ought to be saved was justified by events. Owing to the great severity of the pain, I gave morph. sulph. gr. ½ by the mouth hourly till the pain was moderated, so as to be just tolerable, prescribed hot antiseptic mouth lotions, and suggested, as there was a concomitant superficial facial neuralgia, the application of menthol in the form of the ordinary cone or pencil. At first the menthol gave the usual sensation of cold, but when five doses, that is, gr. ⅝, of morphine had been taken, the patient observed to me that the sensation of cold no longer seemed to arise on using the menthol. I saw that the pupils were but moderately contracted, there was no drowsiness whatever, and just relief from the intense pain of the periodontitis. Thinking that tactual sensation was also abolished, due to the neuralgia or morphine, or both, I asked the patient to rub the menthol again. He did so, and said he could feel the rubbing "of course," but no longer did he perceive the cooling sensation so familiar to him. Time has passed, all pain has passed, and the tooth remains. I think that the sensation of cold is therefore not a quality of tactual sensation, as few I believe still advocate. In this case it was abolished, and the tactile sensation remained. Does it follow that morphinomaniacs are less sensitive to cold than others? The action of menthol on the skin, it is said, is due less to evaporation than to a stimulation of the cold spots of the skin, and as the cold spots are more numerous than the hot spots, its action is more readily appreciated. I hope that those who have large facilities for further observations on the interesting fact here noted will investigate the question further.

Disturbed Nights.

J. B. writes: In answer to "Night Bird," the same thing used to occur to me, as I had much night work early in my practice, and I found chloral hydrate 15 gr. dissolved in water by far the best thing. I tried sulphonal, and later on isopral and veronal, but they were not so satisfactory as chloral. Of course, it is necessary to limit it to a safe dose. This never did me any harm, and preserved my health, for otherwise I was unfit for work the next day.

After a time my position improved, and I had less and less night work, and ultimately none. Nevertheless, sleepless nights occurred at intervals of about ten to fifteen days, and I continued the chloral. Later in life I noticed that it was producing slight conjunctivitis, chiefly evidenced by watering of the eyes when driving out, and I carefully studied the causes of the sleepless nights in order to get rid of the chloral. I found that one always followed a late evening talk with one particular friend, or indeed with any one lively, entertaining, and intellectual. I also noticed that when any night was going to turn out a sleepless one a heat seemed to rise in the body; I was conscious of a glow and unusual warmth about ten or fifteen minutes after lying down. I got my friend to come and see me in the afternoons, allured by a cup of tea and other inducements, and I took care always to be cool, or rather cold, for half an hour after lying down—only one thin blanket in summer and two in winter, with no counterpane. By thus preventing the occurrence of the heat I got rid of the necessity for the chloral.

Quiet evenings, with little or no conversation after eight o'clock, and a cool bed, will I believe cure most cases of insomnia, provided worry is absent. I find a little music conducive to sleep; it does not excite the brain like conversation, and diverts the mind from the thoughts of the day.

Is Brilliant Illumination Deleterious to the Sight?

Dr. Arthur Todd-White writes: During the process of evolution of man and during the thousands or, according to most authorities, tens of thousands of years which he has taken to rise to his present state of civilization an interesting point arises: Has this evolution always been in the direction of advancement and improvement? I think that, at any rate in some ways at least, this is not the case; we often wonder how it is that the human infant is so helpless during the first few months after birth. Was this always the case or were the children of our primaeval ancestors able to run about as soon as born? I think that probably this was the case. Civilization is affecting the sight; this especially occurs in urban districts where we live among houses and practically never, except on holidays, use our eyes for *distant vision;* moreover, the absence of green in our surroundings must be distinctly deleterious to vision. We ought to plant more trees and use green paint more freely. Many animals can see in the dark, and I am of opinion that this is one of the powers which we have lost and which must have been possessed in a high degree by prehistoric man in the paleolithic or eolithic days, many of whom lived *in perfectly dark* caves or holes in the ground, this probably before the days of fire. There is little doubt those people did not have fires; even if they had, it would have been impossible to illuminate the caves in many cases by fire for fear of suffocation.

This may appear a trivial matter, but it all leads up to a very important question and one which is forced upon us by the number of people who to day require glasses—namely, is it better for the eyes to have a brilliant light or a more subdued light to work or read by?

Does the sight of a man who works beneath a brilliant light last as well as that of one who works by candle or some less powerful light, such as the miners who use candles or Davy's lamp?

How does the sight of the natives of a tropical or sunny country compare with that of the inhabitants of our own country? In Australia not only is there more sunshine but the atmosphere is clearer, enabling one to see great distances and to take much clearer photographs. If we find that our own people, living as they do in a more brilliantly illuminated country, have as a race superior sight to our own, we can go ahead improving our already brilliant electric and gas lights; but if we find the sight of a race exposed to brilliant sunlight suffers, then how much worse must it be to be exposed to brilliant artificial light, and the human eye has not been *gradually* trained through the ages to stand the strain of such brilliance, and there is no doubt a point at which illumination reaches the maximum without strain on the sensitive retina; have we reached that point with incandescent lights, tantalums, osmiums, etc.? *I think we have passed it*, and still the cry "*more light*" comes, and the view is held that reading by a bad light, so-called nowadays, which would have been a good light 50 years ago is deleterious to sight; I doubt it; the "good lights" of to-day are *too good*.

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